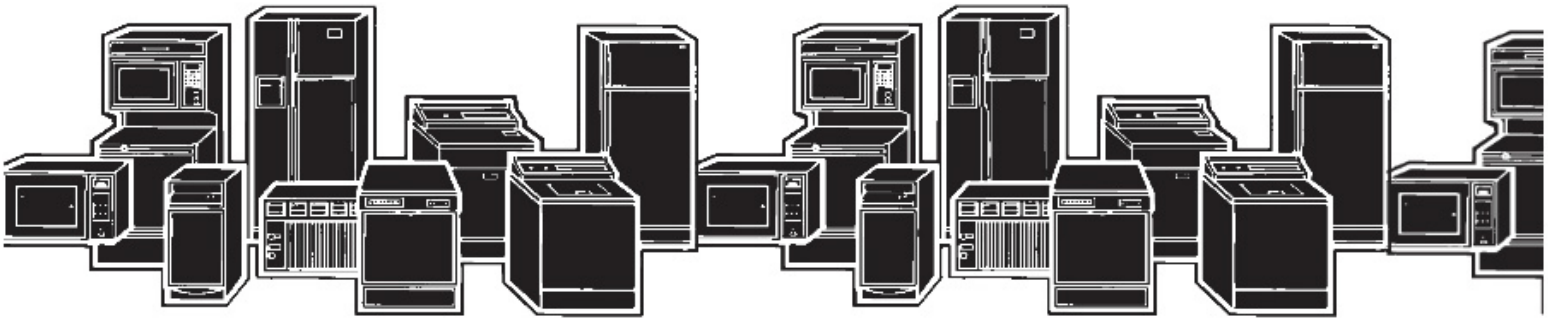
CONSUMER SERVICES TECHNICAL EDUCATION GROUP PRESENTS

CL-20

Whirlpool Commercial 2017 Topload Washer

MODELS: CAE2795 CAE2745 CAE2765

Service Manual
Part No. **W11112694**



FORWARD

This Service Manual, (Part No. W11112694), provides the Commercial Laundry Service Professional with information on the operation, and service of the Whirlpool Commercial 2017 Topload Washer. For specific information on the model being serviced, refer to the “Installation Instructions,” or “Tech Sheet” provided with the washing machine or on the Service Website. The Wiring Diagrams used in this Service Manual are typical and should be used for training purposes only. Always use the Wiring Diagram located in the Tech Sheet supplied with the product, or on the Service Website, when servicing the washing machine.

The Service Website is located online at www.serviceconnections.org. For access to the website or for questions, please contact your Field Service Manager.

GOALS AND OBJECTIVES

The goal of this Service Manual is to provide information that will enable the Commercial Laundry Service Professional to properly diagnose malfunctions and repair the Whirlpool Commercial 2017 Topload Washer. The objectives of this Service Manual are to:

- Understand and follow proper safety messages.
- Understand and diagnose improper installations.
- Successfully troubleshoot and diagnose malfunctions.
- Successfully perform necessary repairs.
- Successfully return the washing machine to its proper operational status.

WHIRLPOOL CORPORATION assumes no responsibility for any repairs made on our products by anyone other than authorized Commercial Laundry Service Professionals.

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TABLE OF CONTENTS

Page

View Equipment & Safety Video vi

GENERAL 1-1
Model number designations 1-2
Serial number designations 1-2
Model & Serial number data plate and Tech Sheet location 1-3
Warranty 1-4
Theory of operation 1-5
Drive system 1-5
Shifter / actuator 1-7
Agitator 1-8
Water levels 1-8
Lid lock 1-9
Control panel and features 1-10
Specifications 1-11

USER INFORMATION 2-1
Metercase equipped model information 2-1
Optional security bolts 2-1
Location requirements 2-2
Drain system 2-3

COMPONENT ACCESS 3-1
Console open & components 3-1
Facia removal 3-2
Central control unit - CCU 3-3
Temperature selector switch 3-5
Coin slide interface board 3-6
Motor relay 3-7
Water inlet valves 3-8
Thermistor 3-10
Upper wire harness 3-11
Upper back panel 3-12
Metercase equipped models 3-13
Coin slide removal 3-14
Metercase removal 3-15
Coin slide adapter plate 3-16
Coin funnel 3-17
Lid bumpers 3-18
Top panel open 3-19
Components accessible under top panel 3-20
Lid lock 3-21
Lid strike 3-22
Top panel removal 3-23

TABLE OF CONTENTS - CONTINUED

Page

Agitator 3-24
Clothes guard 3-25
Tub ring 3-26
Spin basket 3-27
Front panel 3-29
Components accessible behind front panel 3-30
Tub suspension rods 3-31
Components accessible from the bottom 3-32
Drive belt 3-33
Capacitor 3-34
Drive motor 3-35
Drive pulley 3-36
Shifter 3-37
Splutch assembly 3-38
Drain pump 3-39
Drain pump outlet hose 3-40
Transmission 3-41
Outer tub 3-43
Cabinet 3-46

COMPONENT TESTING 4-1
Water valves testing 4-1
Drain pump motor testing 4-1
Drive motor testing 4-2
Motor capacitor testing 4-2
Shifter motor testing 4-3
Lid lock testing 4-3
Thermistor testing 4-4
Central control unit connections 4-5

DIAGNOSIS & TROUBLESHOOTING 5-1
Service diagnostic test modes 5-2
Troubleshooting guide 5-5
Central control unit connectors & pinouts 5-5
Cycle timing charts 5-6

WIRING DIAGRAM 6-1

ALPHABETICAL COMPONENT INDEX 7-1

---- NOTES ----

INTERACTIVE FLIPBOOK SERVICE MANUAL INSTRUCTIONS

View Flipbooks in the browser of PC, MAC, iPad, iPhone and Android devices.

Turn pages by dragging corner, clicking page shadow, scrolling mouse wheel, arrow keys, etc.
Click on any topic in the Table of Contents to go directly to that section.
Click on any link that says (See page ?-?) to go directly to the page referenced.
Double-click anywhere in a page to zoom in. Double-click again to zoom out.
Click to view video. Click for full screen video. Click to close video.
Click in the top left corner for Search, Print & Settings for sound on or off.
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Click at bottom of page to turn on AutoFlip to advance pages automatically every 9 seconds.

VIEW EQUIPMENT & SAFETY VIDEO

GENERAL

WASHING MACHINE SAFETY

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.

This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING." These words mean:

⚠DANGER — **You can be killed or seriously injured if you don't immediately follow instructions.**

⚠WARNING — **You can be killed or seriously injured if you don't follow instructions.**

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

IMPORTANT
Electrostatic Discharge (ESD)
Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

• Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

-OR-

Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.

• Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.

• Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.

• When repackaging failed electronic control assembly in anti-static bag, observe above instructions.

MODEL NUMBER DESIGNATIONS

MODEL NUMBER C A E 27 4 5 F Q 0

PRODUCT GROUP
- C Whirlpool Commercial Laundry

PRODUCT TYPE
- A Automatic Washer

CONTROL TYPE
- E Electronic Controls
- M Mechanical Controls

CABINET
- 27 27"Inch Wide Cabinet

PAYMENT TYPE
- 4 LED Indicators Coinslide Equiped
- 6 LED Indicators Open Architecture
- 9 LED Indicators / Full Console / No Metercase

DRIVE TYPE
- 2 Direct Drive 2-Speed Motor
- 3 New Energy Advantaged Topload
- 5 Next Generation Topload

YEAR OF INTRODUCTION

A	2012	D	2015
B	2013	E	2016
C	2014	F	2017

COLOR
- Q White

ENGINEERING CHANGE (NUMERIC)

SERIAL NUMBER DESIGNATIONS

SERIAL NUMBER C 7 19 10901

DIVISION RESPONSIBILITY
- M = Marion, Ohio
- C = Clyde, Ohio
- HL= Monterrey, MX

YEAR OF PRODUCTION

W = 2008	2 = 2012	6 = 2016
Y = 2009	3 = 2013	7 = 2017
0 = 2010	4 = 2014	8 = 2018
1 = 2011	5 = 2015	9 = 2019

WEEK OF PRODUCTION
- 19 19th Week in the Calendar Year

MANUFACTURING SEQUENCE NUMBER

MODEL & SERIAL NUMBER DATA PLATE AND TECH SHEET LOCATION

Tech Sheet with Wiring Diagram:
Located in a plastic bag adhered to the inside of the front panel.
To access, remove the front panel.

For technical assistance at anytime, contact the Commercial Laundry Technical Support Center by dialing 1-800-662-3587. Chose the option for Authorized Servicer or Distributor and then the option for Technical Support.

The washer model number and serial number will be required by technical support.

WARRANTY

WHIRLPOOL® COMMERCIAL LAUNDRY LIMITED WARRANTY

IF YOU NEED SERVICE:

Contact your authorized Whirlpool® Commercial Laundry distributor. To locate your authorized Whirlpool® Commercial Laundry distributor, call:

1-800-662-3587, or for web inquiries, visit www.WhirlpoolCommercialLaundry.com.

For written correspondence:

Whirlpool® Commercial Laundry Service Department
2000 N M 63
Benton Harbor, Michigan 49022-2632 USA

90 DAY LIMITED WARRANTY

WHAT IS COVERED

90 DAY LIMITED WARRANTY (PARTS AND LABOR)

For 90 days from the original date of purchase, when this commercial appliance is installed, maintained, and operated according to the instructions attached to or furnished with the product, Whirlpool Corporation (hereafter "Whirlpool") will pay for factory specified replacement parts and repair labor to correct defects in materials or workmanship that existed when this commercial appliance was purchased.

TWO YEAR LIMITED WARRANTY (PARTS ONLY)

For the first two years from the original date of purchase, when this commercial appliance is installed, maintained, and operated according to the instructions attached to or furnished with the product, Whirlpool will pay for factory specified replacement parts to correct defects in materials or workmanship that existed when this commercial appliance was purchased.

YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR AS PROVIDED HEREIN. Whirlpool recommends that you use an "in network" service provider to diagnose and repair your Commercial Laundry product. Whirlpool will not be responsible under this warranty to provide additional replacement parts as a result of incorrect diagnosis or repair by an "out of network" service company. This limited warranty is valid in the United States or Canada and applies only when the commercial appliance is used in the country in which it was purchased. This limited warranty is effective from the date of the original consumer purchase. Proof of original purchase date is required to obtain service under this limited warranty.

WHAT IS NOT COVERED

1. All other costs including labor, transportation, shipping, or custom duties for covered parts.
2. Factory specified replacement parts if this commercial appliance is used for other than normal, commercial use or when it is used in a manner that is inconsistent to published user or operator instructions and/or installation instructions.
3. Service calls to correct the installation of your commercial appliance, to instruct you on how to use your commercial appliance, to replace or repair house fuses, or to correct external wiring or plumbing.
4. Service calls to repair or replace appliance light bulbs, air filters, or water filters. Consumable parts are excluded from warranty coverage.
5. Damage resulting from improper handling of product during delivery, theft, accident, alteration, misuse, abuse, fire, flood, acts of God, improper installation, installation not in accordance with local electrical or plumbing codes, or use of products not approved by Whirlpool.
6. Pick up and delivery. This commercial appliance is designed to be repaired on location.
7. Repairs to parts or systems resulting from unauthorized modifications made to the commercial appliance.
8. The removal and reinstallation of your commercial appliance if it is installed in an inaccessible location or is not installed in accordance with published installation instructions.
9. Damage resulting from exposure to chemicals.
10. Changes to the building, room, or location needed in order to make the commercial appliance operate correctly.
11. Factory specified replacement parts on commercial appliances with original model/serial numbers that have been removed, altered, or cannot be easily determined.
12. Discoloration, rust, or oxidation of stainless steel surfaces.
13. Factory specified replacement parts as a result of incorrect diagnosis or repair by an "out of network" service company.

The cost of repair or replacement under these excluded circumstances shall be borne by the customer.

DISCLAIMER OF IMPLIED WARRANTIES

IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO TWO YEARS OR THE SHORTEST PERIOD ALLOWED BY LAW. Some states and provinces do not allow limitations on the duration of implied warranties of merchantability or fitness, so this limitation may not apply to you. This warranty gives you specific legal rights, and you also may have other rights that vary from state to state or province to province.

DISCLAIMER OF REPRESENTATIONS OUTSIDE OF WARRANTY

Whirlpool makes no representations about the quality, durability, or need for service or repair of this major appliance other than the representations contained in this Warranty. If you want a longer or more comprehensive warranty than the limited warranty that comes with this major appliance, you should ask Whirlpool or your retailer about buying an extended warranty.

LIMITATION OF REMEDIES; EXCLUSION OF INCIDENTAL AND CONSEQUENTIAL DAMAGES

YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR AS PROVIDED HEREIN. WHIRLPOOL SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you also may have other rights that vary from state to state or province to province.

08/16

THEORY OF OPERATION

INTRODUCTION

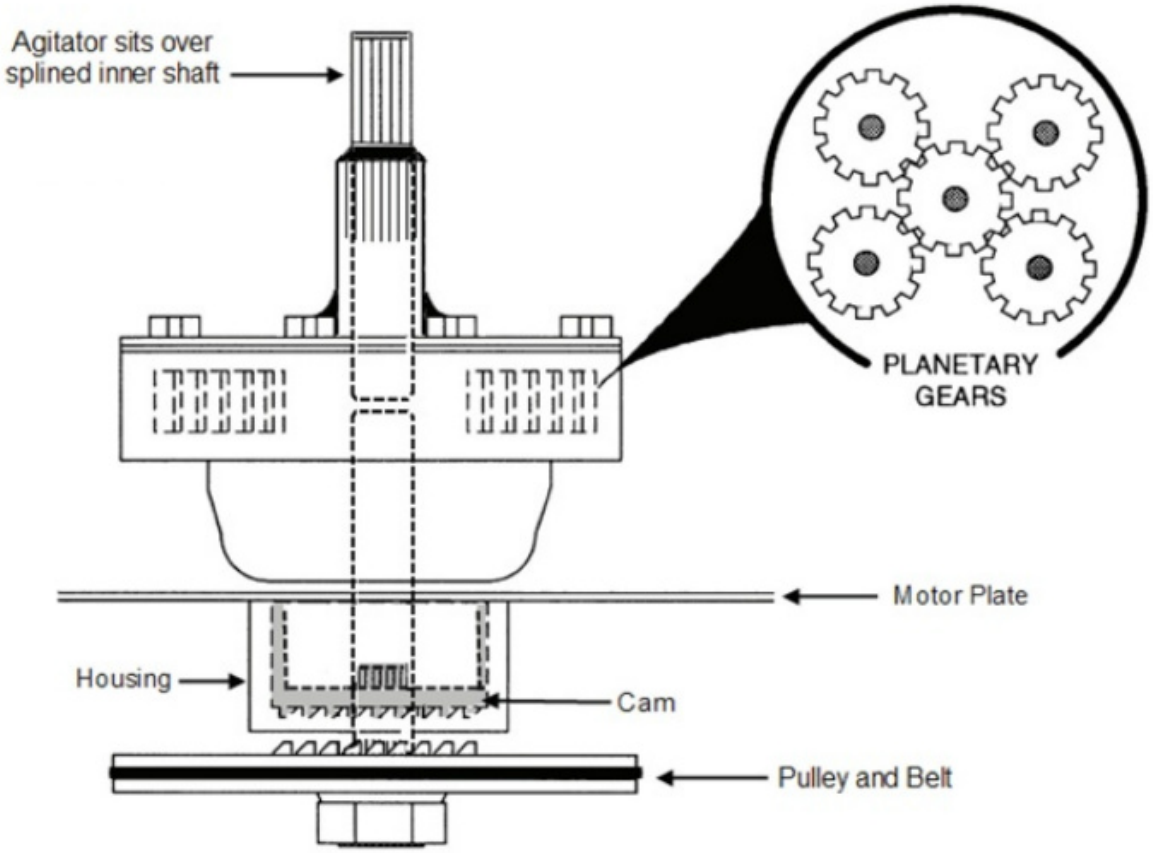
The Whirlpool Commercial 2017 Topload Washer has several familiar features and some new designs integrating them into this totally new design.

DRIVE SYSTEM

Motor – Bi-directional PSC (Permanent Split Capacitor) 120VAC. Agitation and variable spin speeds are accomplished by applying power in pulses.

Transmission – The transmission is a non-serviceable belt driven component.

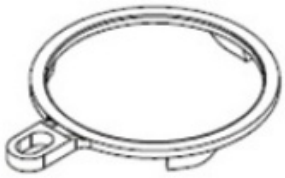
- Inner shaft top splines connect to the agitator.
- Bottom splines connect to the splutch pulley.
- Bottom splines connect to the inner splines of the splutch cam.



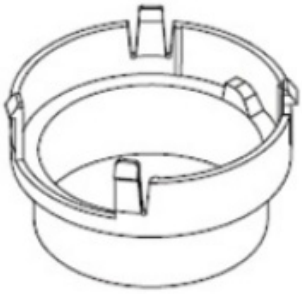
Splutch – The splutch is made up of five parts; a spring, housing, cam ring, basket drive gear and pulley. The pulley is connected to the agitator through the agitator shaft. The agitator always moves with the pulley. The basket drive gear is connected to the basket by the inner splines contacting the outer splines of the transmission. The cam ring raises and lowers the basket drive gear. When the basket drive gear teeth are engaged to the pulley teeth the basket will spin along with the agipellor.

Spring

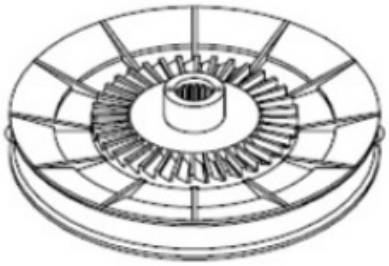
Basket Drive Gear
Inner splines - connect to transmission (and basket)
Outer teeth - connect to pulley



Cam Ring



Housing



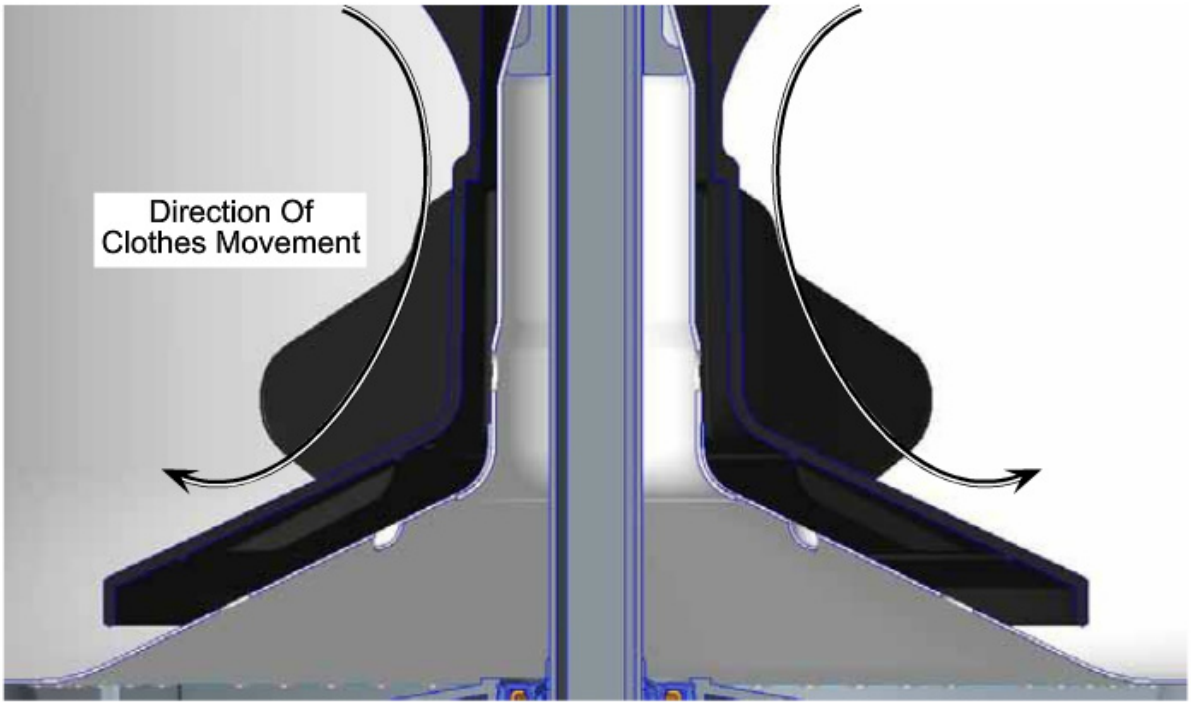
Pulley
Inner splines - connect to agitator shaft
Outer teeth - connect to Basket Drive Gear

SHIFTER / ACTUATOR

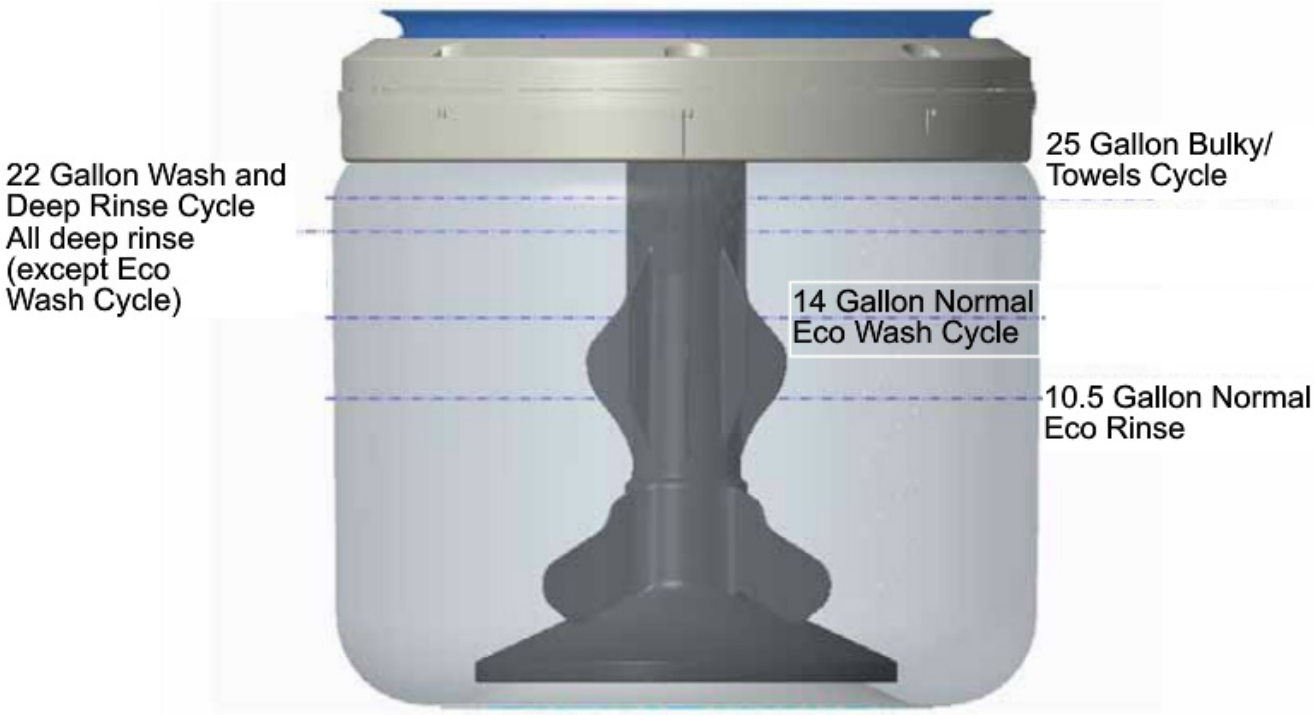
The actuator serves several functions. It has a synchronous motor that shifts the splutch slider and monitors the position of the splutch. It also houses a transmission speed/position optical sensor.

The shifter motor rotates a cam, attached to the shifter arm which moves between two positions. The shifter arm moves the transmission lever which engages or disengages the transmission creating agitate and spin. The washing machine is in spin when the shifter is up in this position. The teeth of the splutch are engaged with the teeth of the pulley and the motor turns the pulley in a direction for spin. When the shifter pulls the lever down it disengages the teeth. The washing machine is in agitate. The length of each stroke is controlled by the CCU. There are three different patterns.

AGITATOR



WATER LEVELS



LID LOCK

Since this washer does not utilize a brake, a lid lock is used to prevent access during spin. During the spin cycles, a lid lock mechanism will lock the lid. The lid must be closed for the washer to fill, wash, drain, or spin. The lock mechanism houses a switch that senses the lid is down, a latch solenoid and a magnetic reed switch to confirm that the lid is locked.

CONTROL PANEL AND FEATURES

ENERGY ADVANTAGE TOPLOAD WASHER
This washer is specially designed to conserve energy and water. Each cycle, along with any selected options, will result in different energy and water usage. As cycle and temperature selections are made, energy savings will vary. Factory preset cycles will save the most energy and water.

CYCLE SELECTOR KNOB
Use the Wash Cycle Selector Knob to select cycles on the washer. Turn the knob to select a cycle for various laundry loads types.

TEMPERATURES
Temperature Control senses and maintains uniform water temperatures by regulating incoming hot and cold water. Select a wash temperature based on the type of fabric and soils being washed. For best results and following the garment label instructions, use the warmest wash water safe for the fabric.

CYCLE TIME
The wash time is preset for each wash cycle. Selecting the various cycles will increase or decrease cycle times.

SPIN SPEED
This washer automatically selects the spin speed based on the cycle selected. The preset speeds cannot be changed.

SPECIFICATIONS

Washer Specifications	
Voltage:	100 - 135VAC
Frequency:	57 - 63 Hz
Maximum Amps:	12 Amps
Circuit Protection:	15 Amp Instantaneous Type Fuse (Main Control)
Water Pressure:	15 - 125 PSI
Drain Height:	34 in. to 8 ft. (86cm to 244cm)
Operating Temperature Range:	40 - 115°F (4.5 - 46°C)

---- NOTES ----

USER INFORMATION

METERCASE EQUIPPED MODEL INFORMATION

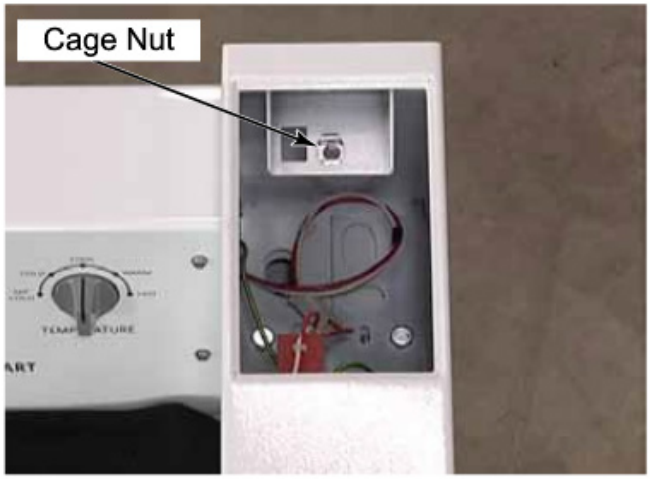
The CAE2765 model requires:

- a lock in the service access door,
- a coin box and
- a payment system.

There is a ground wire inside the metercase that will need to be attached to the coinslide when installed

The CAE2745 comes with these parts supplied by the factory.

Coin slide models have a bracket below the service access door with a cage nut installed. This is for use with locks that have threaded shafts instead of a locking tab.

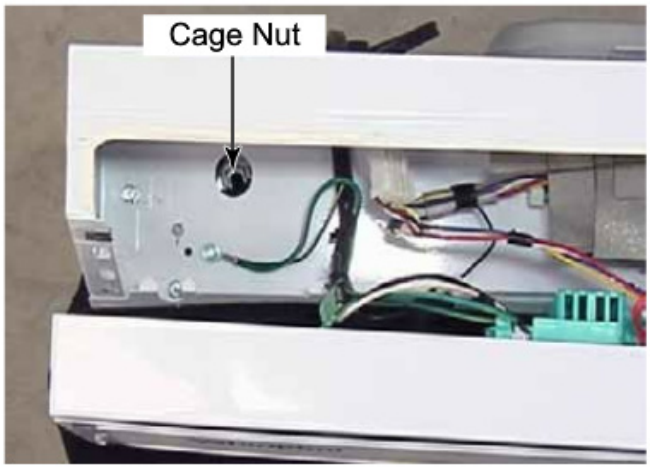


A coin slide must have a micro switch and wire harness that is plugged into the coin slide interface board inside the console.

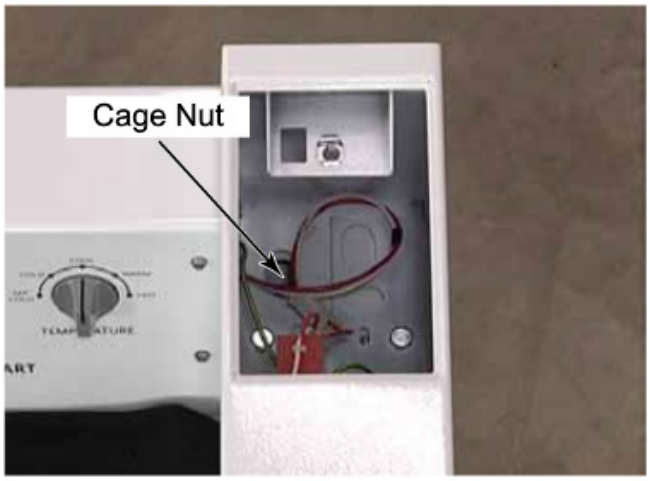
OPTIONAL SECURITY BOLTS

Optional Security Bolt (#3353994) and Cone (#356674) are available to secure the top to the cabinet.

Install one bolt and cone in the console down into the cage nut in the cabinet.



Install another bolt and cone in the service access area of the metercase down into the cage nut in the cabinet.



LOCATION REQUIREMENTS

Selecting the proper location for the washer improves performance and minimizes noise and possible washer “walk.”

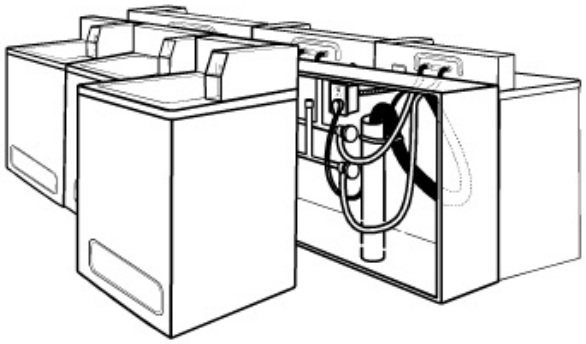
The washer can be installed in a basement, laundry room, or recessed area. See “Drain System.”

Companion appliance location requirements should also be considered.

IMPORTANT: Do not install or store the washer where it will be exposed to the weather. Do not store or operate the washer in temperatures at or below 32°F (0°C). Some water can remain in the washer and can cause damage in low temperatures. Proper installation is your responsibility.

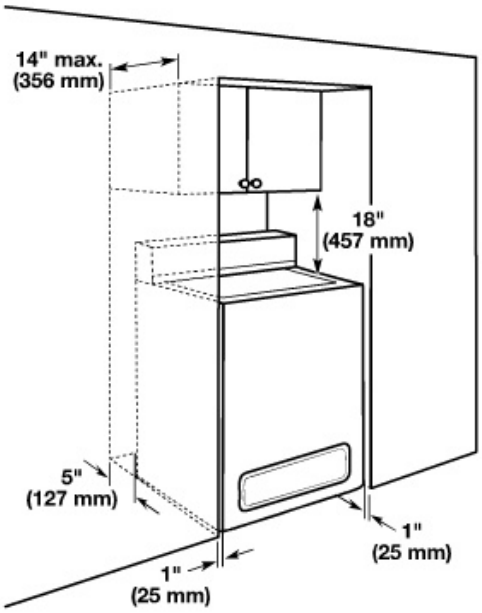
You will need:

- A water heater set to 120°F (49°C).
- A grounded electrical outlet located within 4 ft. (1.2m) of power cord on back of washer. See “Electrical Requirements.”
- Hot and cold water faucets located within 4 ft. (1.2m) of hot and cold water fill valves on washer, and water pressure of 20-100 psi (138-690 kPa). A pressure reduction valve should be used in the supply line where inlet pressure entering the building exceeds 100 PSI (690 kPa) to avoid damage to the washer mixing valve.
- Single washer installations require 12” (300mm) minimum risers to provide an air cushion and avoid noise and damage to valves.
- A level floor with maximum slope of 1” (25mm) under entire washer. Installing on carpet is not recommended.
- Floor must support washer’s total weight (with water and load) of 315 lbs (143 kgs).
- A floor drain under the bulkhead. Prefabricated bulkheads with electrical outlets, water inlet lines, and drain facilities should be used only where local codes permit.



Recessed Area or Closet Installation

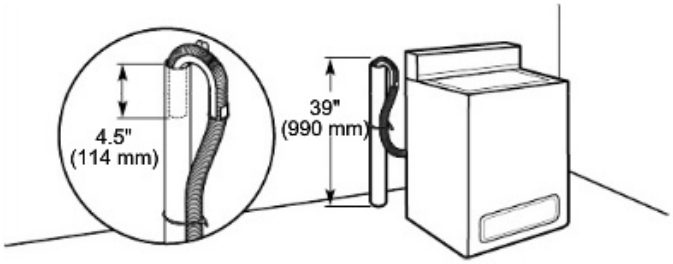
- This washer may be installed in a recessed area or closet. The installation dimensions shown are the minimum spaces allowable. Additional spacing should be considered for ease of installation and servicing. Companion appliance spacing should be considered.



DRAIN SYSTEM

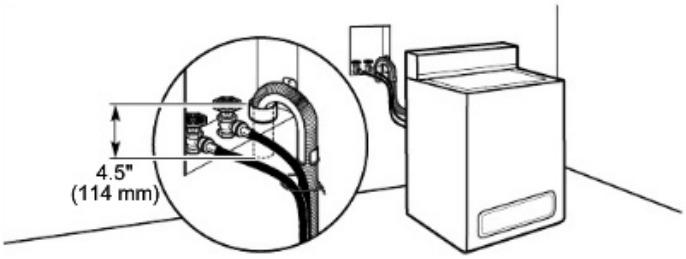
Drain system can be installed using a floor drain, wall standpipe, floor standpipe, or laundry tub. Select method you need.

Floor standpipe drain system



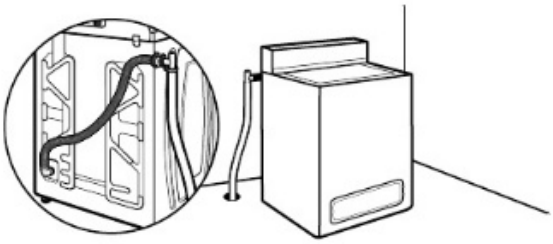
Minimum diameter for a standpipe drain: 2" (51mm). Minimum carry-away capacity: 10 gal. (38L) per minute. Top of standpipe must be at least 39" (990mm) high; install no higher than 96" (2.44m) from bottom of washer.

Wall standpipe drain system



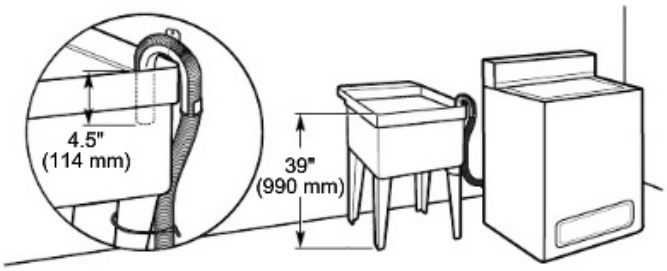
See requirements for floor standpipe drain system.

Floor drain system



Floor drain system requires a Siphon Break Kit (Part Number 285320). Minimum siphon break: 28" (710mm) from bottom of washer. Additional hoses may be needed.

Laundry tub drain system



Minimum capacity: 20 gal. (76L). The top of the laundry tub must be at least 39" (990mm) above floor.

---- NOTES ----

COMPONENT ACCESS

CONSOLE OPEN & COMPONENTS

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

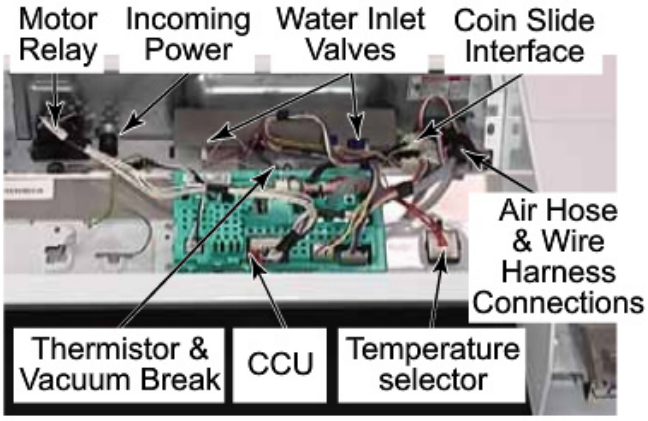
2. To avoid damage, lay a towel on the washer and place tools or removed parts on towel.

3. Remove the two top T-20 security screws on the front of the facia.

4. Lift the facia and control panel up and lay them forward to gain access to the components in the console.

5. Components located in the console are the:

- Central Control Unit (CCU) with cycle selector switch on the front,
- Temperature selector switch,
- Incoming power cord,
- Motor relay,
- Water inlet valves,
- Vacuum break assembly,
- Thermistor,
- Coin slide interface board
- Pressure switch air hose connection,
- Wire harness connections.



FACIA REMOVAL

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

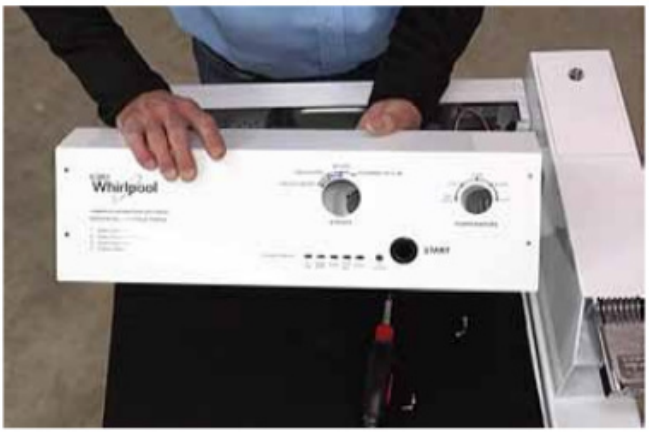
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the two top T-20 security screws on the front of the facia.

3. Remove the two bottom T-20 security screws on the front of the facia.

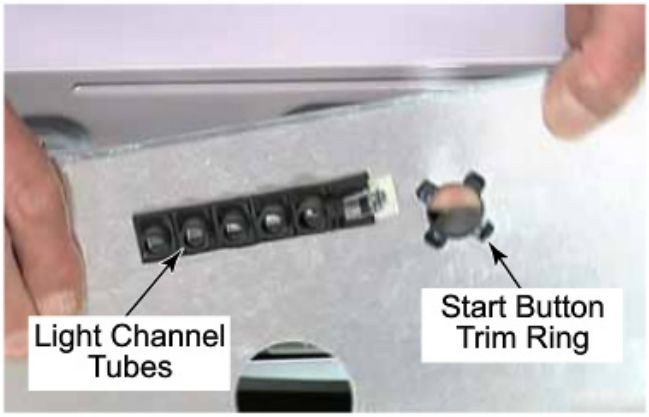
4. Remove the facia.



5. The Start button trim ring can be removed from the facia by releasing the clips inside the facia.

6. Remove the trim ring from the front of the facia.

7. The light channel tubes are attached to the inside of the facia.



CENTRAL CONTROL UNIT - CCU

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

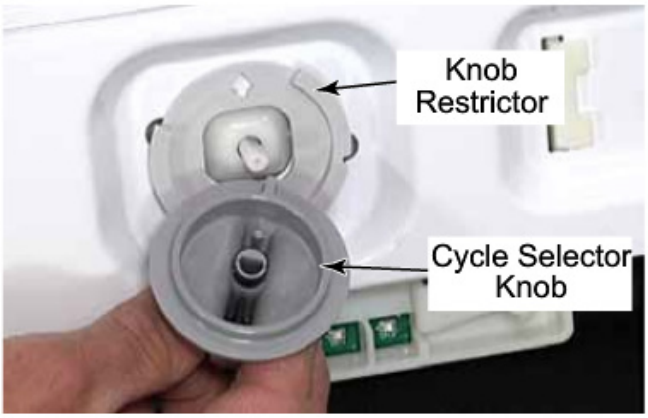
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the facia. (See page 3-2)

3. Pull the cycle selector knob off the front of the control panel.

4. Behind the knob is a cam that restricts the amount that the cycle selector knob can turn depending on model.



5. When reinstalling the restrictor, place the three posts into the three holes in the control panel. There is also an arrow that points up.

6. The knob and the shaft have a flat spot to match up for proper orientation of the knob. Make sure the line on the knob is oriented in the area between the stops of the restrictor, and the knob is pushed on the shaft as far as possible.

7. Release the locking tab and disconnect the coin slide interface board rast connector.

8. Press the locking tab and pull the plug for both the thermistor and water valves from the connector at J3.

9. Press the two locking tabs and pull the lid lock plug off the connector at J15.

10. Press the two locking tabs and disconnect plug at the J16 connector. This connector supplies power and control to components in the cabinet of the washing machine.

11. Remove J7 power plug by pulling it out of the connector. There is no lock on this plug.

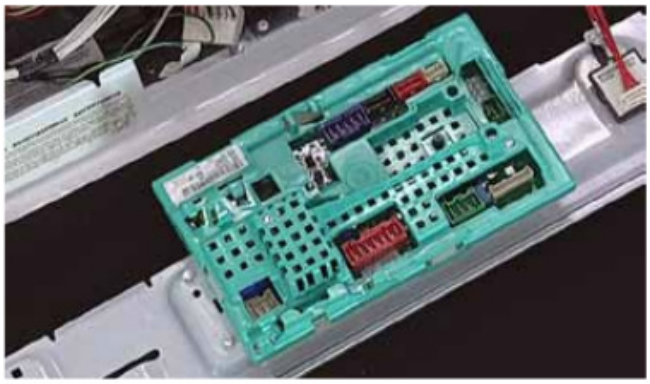
12. Remove the wires from the clip on the CCU.

13. Press the two locking tabs and pull the plug for the shifter off the connector at J2.

14. Pull the wire retainer clip out of the hole.

15. Pull the pressure switch air hose off the CCU.

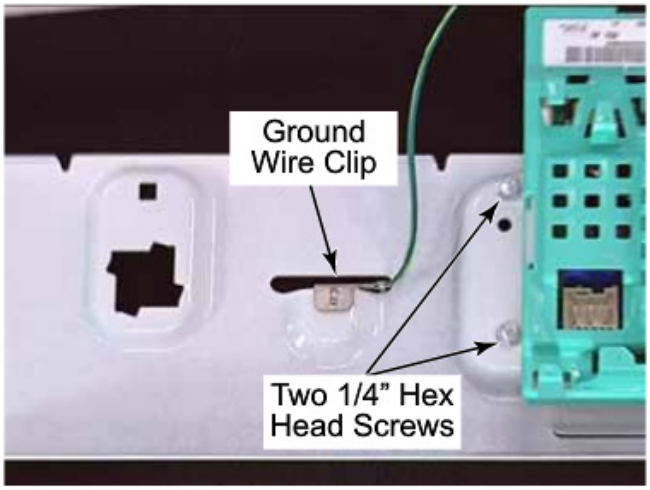
16. Release the locking tab and disconnect the water temperature selector switch rast connector.



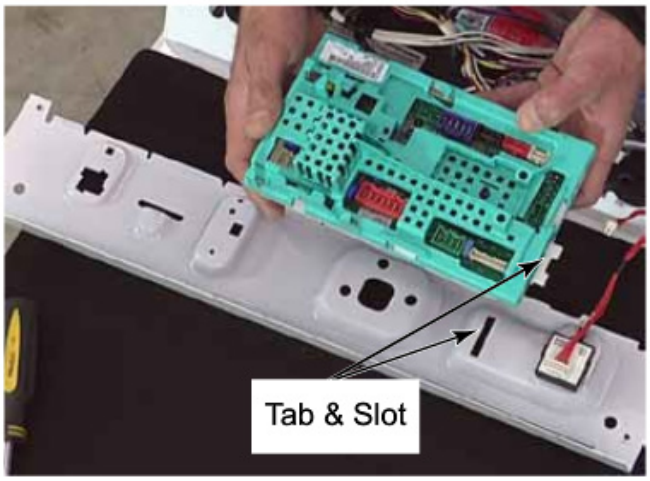
17. Use a small flat blade screwdriver to remove the ground wire clip from the back of the control panel.

TECH TIP: When reinstalling the ground wire clip, squeeze the clip together with a pair of pliers before reinstalling the clip on the control panel to make sure it is tight.

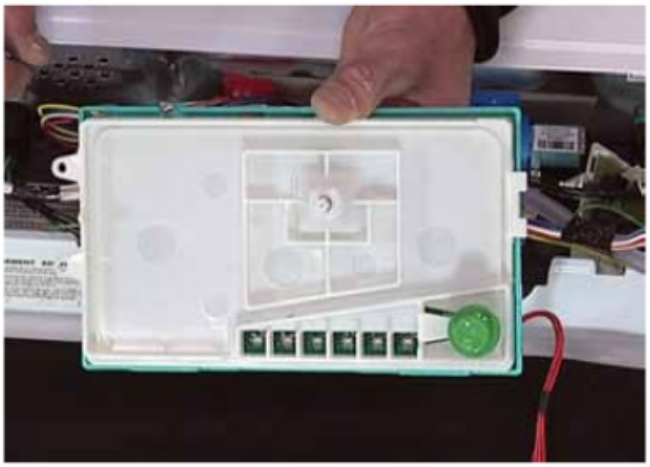
18. Remove two 1/4" hex head screws securing the CCU to the control panel.



19. Lift the CCU and pull the tab out of the slot on the end opposite the screws.



20. The front side of the CCU has the shaft for the cycle selector switch, the LEDs, and the push to start button.



TECH TIP: The push to start button is mounted on a plastic lever arm that is part of the CCU cover. When removing the button make sure to place a finger or thumb on the lever arm as close to the button as possible to hold the lever arm down when pulling the button off. This is to avoid breaking the lever arm by pulling up on it. The button has tabs on three sides and a + shaped hole. When reinstalling the button position the open side of the button toward the lever arm.

TEMPERATURE SELECTOR SWITCH

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

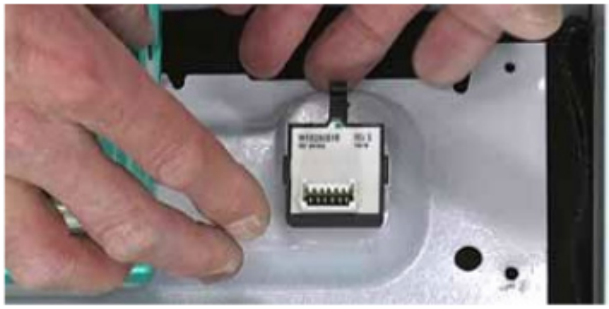
2. Remove the facia. (See page 3-2)

3. Remove the knob from the front of the control panel. There is a flat spot on the shaft and the knob for proper orientation.

4. Lift the control panel and lay it forward.

5. Disconnect the wire harness connection. Grasp all the wires as close to the connection as possible and use a finger on the other hand to help pull the connector out. The connector is keyed for proper orientation during reinstallation.

6. Lift the locking tab and rotate the temperature selector switch 1/8 of a turn.



7. Pull switch out of hole in the control panel.

COIN SLIDE INTERFACE BOARD

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

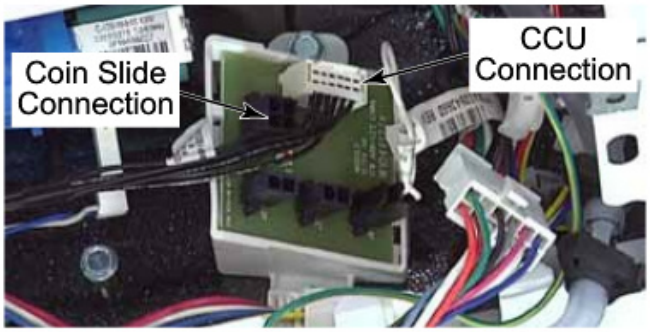
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Open the console. (See page 3-1)

3. Disconnect the wire harness to the CCU. Grasp all the wires as close to the connection as possible. Release the locking tab and pull the rast connector out.

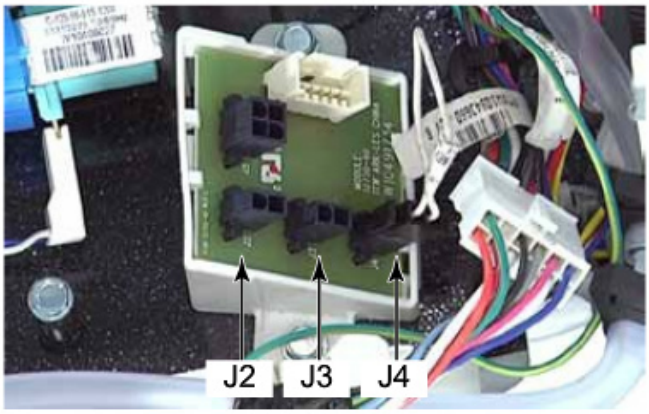
4. If a coin slide is installed it would connect to the four pin connector at J5.



5. The J4 connector is the rinse mode.

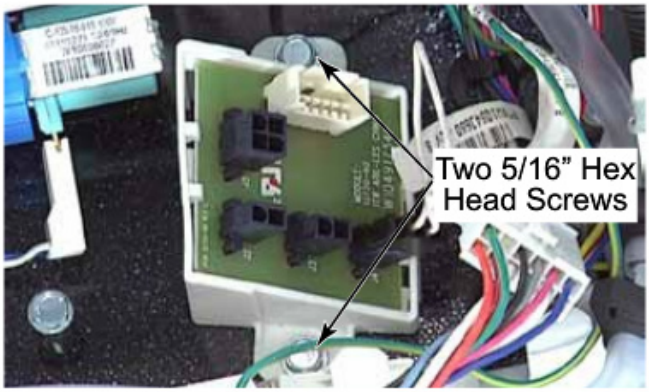
6. The J3 connector is energy saving mode.

7. With the jumper installed on the J2 connector, the vend price is required to start a cycle.



8. Remove three 1/4" hex head screws securing the upper back panel to the back of the console.

9. Remove two 5/16" or (8mm) hex head screws securing the coin slide interface board to the top of the washer.



MOTOR RELAY

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

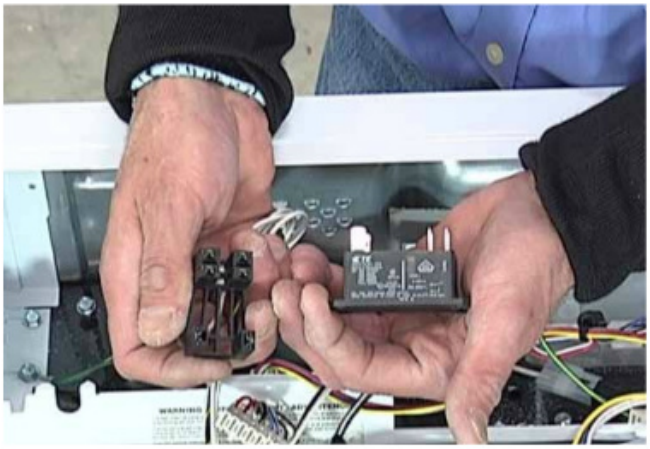
1. Unplug washer or disconnect power.

2. Remove the CCU. (See page 3-3)

3. Loosen one, and remove the other, 5/16" or (8mm) hex head screw securing the motor relay to the top of the washer.

4. Slide the motor relay out from under the screw and remove it from the console.

5. Pull the plug off the spade connectors on the top of the motor relay.



WATER INLET VALVES

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Turn off the water supply to the washer.

2. To access the water inlet valves, unplug washer or disconnect power.

3. Open the console. (See page 3-1)

4. Remove three 1/4" hex head screws securing upper back panel to back of console.

5. Pull the bottom edge of the panel out and down to release the tabs from the top edge of the console and remove the panel.

6. Pull the cardboard shield away from the water inlet valve.

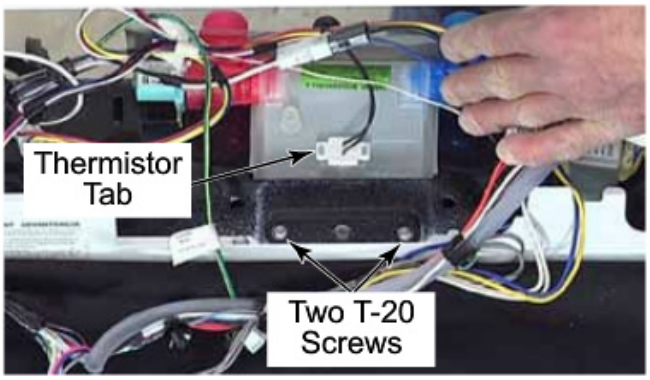
7. Pull the wire harness connector off the hot water inlet valve.

8. Pull the wire harness connector off the cold water inlet valve.

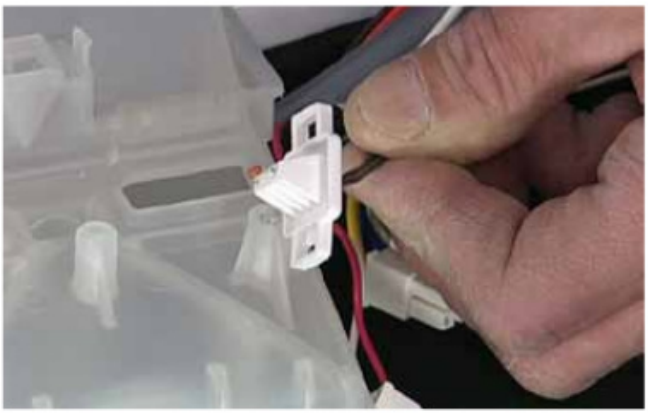
NOTE: Wires for the inlet valves are color coded, red and white wires for the hot water inlet valve, blue and white wires for the cold water inlet valve.

9. Remove two T-20 screws securing the water inlet assembly to the top of washer.

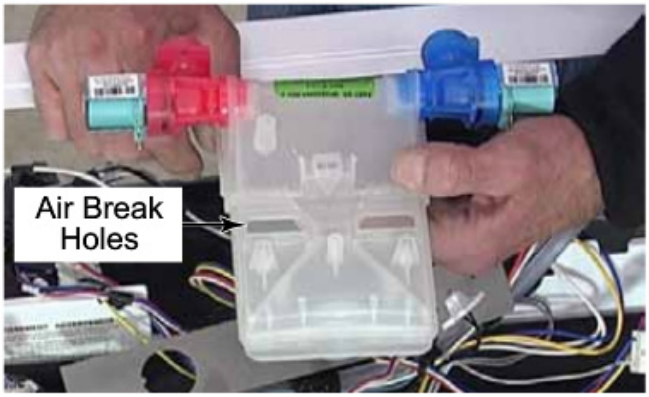
10. Release tabs and remove the thermistor from the top of the vacuum break.



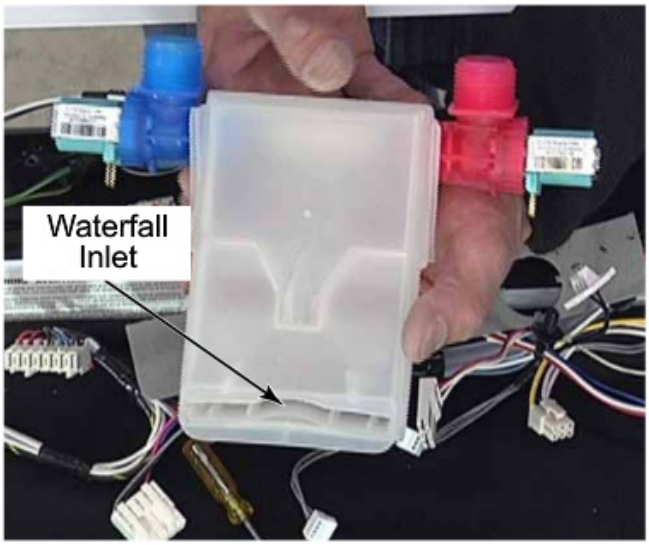
11. The thermistor is part of the wire harness for the water inlet valves.



12. The water inlet valve assembly includes a hot and cold water inlet valve with the air break in between.



13. On the bottom is the waterfall inlet.



THERMISTOR

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

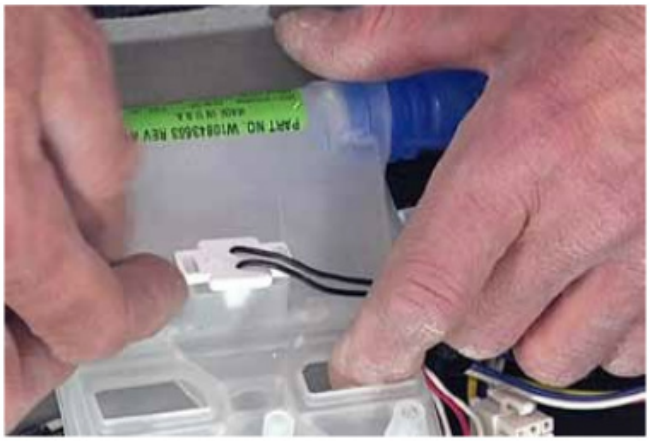
Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

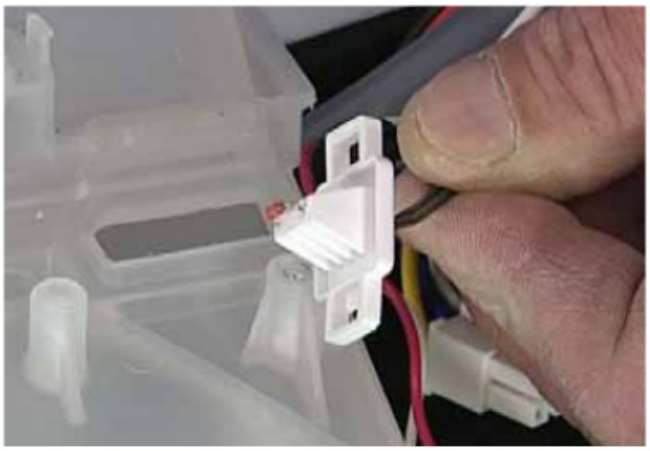
1. Unplug washer or disconnect power.

2. Open the console. (See page 3-1)

3. Release the tabs and remove the thermistor from the top of the vacuum break.



4. The thermistor is part of the wire harness for the water inlet valves.



UPPER WIRE HARNESS

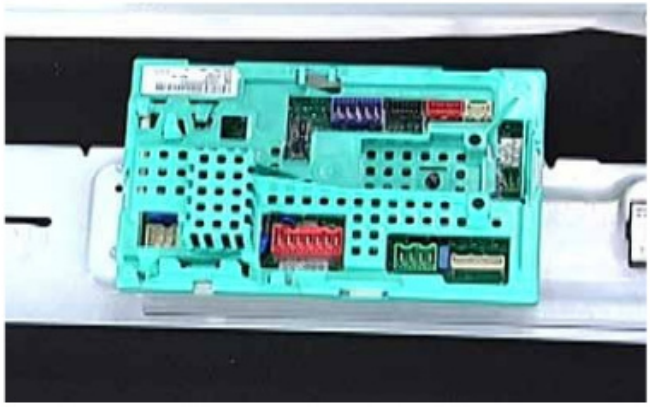
⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

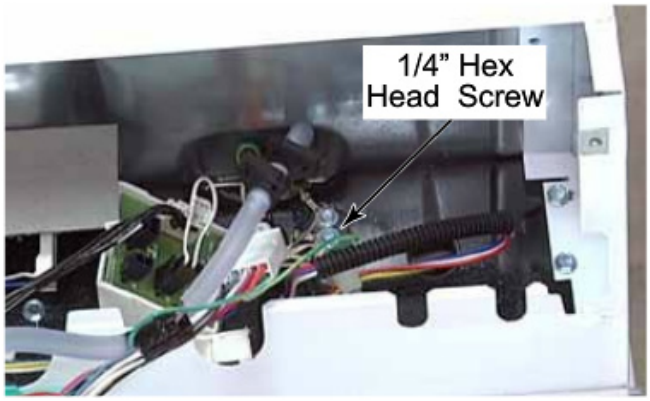
1. Unplug washer or disconnect power.

2. Open the console. (See page 3-1)

3. Disconnect wire connectors from the CCU.

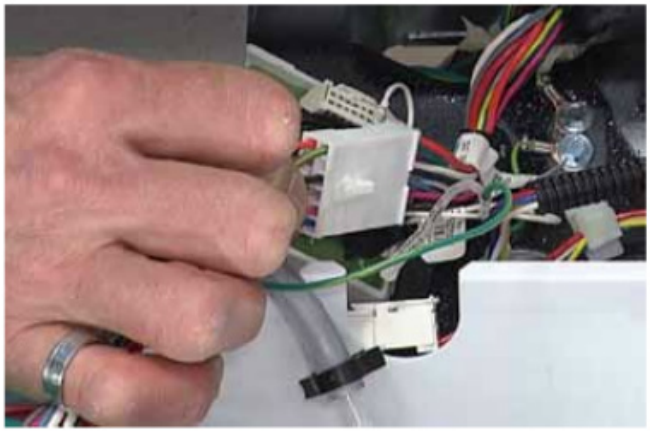


4. Remove the 1/4" hex head screw securing the ground wire to the top of the washer. This screw is pointed and has very fine threads.



5. Disconnect the pressure switch air hose connection by pulling one end of the air hose off the hose barb.

6. Press the locking tab and disconnect 12 pin connector and remove the wire harness.



UPPER BACK PANEL

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

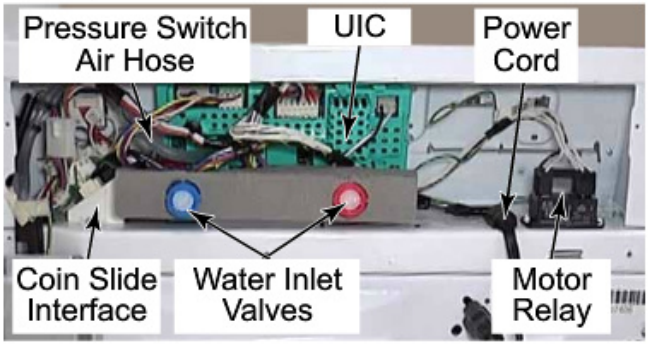
1. Unplug washer or disconnect power.

2. Remove three 1/4" hex head screws securing the upper back panel to the back of the console.

3. Pull the bottom edge of the panel out and down to release the tabs from the top edge of the console.

4. Remove the panel.

5. Component viewable behind the upper back panel are: The coin slide interface board, pressure switch air hose connection, water inlet valves, UIC, power cord and the motor relay.



METERCASE EQUIPPED MODELS

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

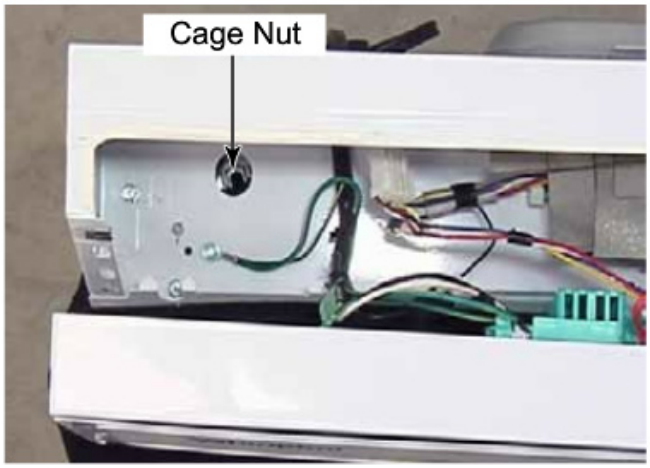
2. The CAE2765 model requires a lock in the service access door, a coin box and a payment system. The CAE2745 comes with these parts supplied by the factory

3. Coin slide models have a bracket below the service access door with a cage nut installed. This is for locks that have threaded shafts instead of a locking tab.

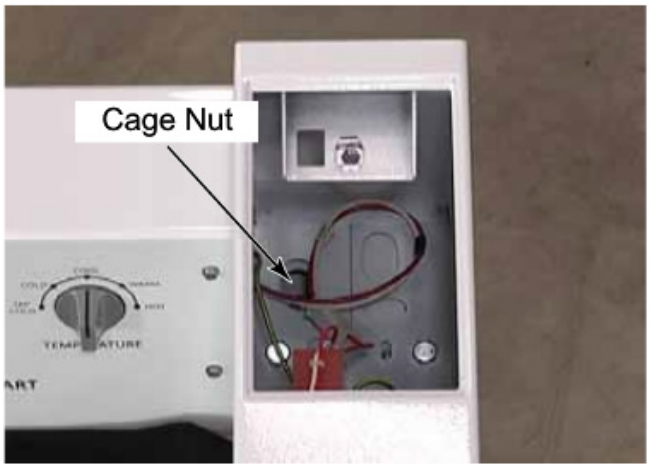
4. A coin slide must have a micro switch and wire harness that is plugged into the coin slide interface board inside the console.

5. Optional Security Bolt (#3353994) and Cone (#356674) are available to secure the top to the cabinet.

6. Install one bolt and cone in the console down into the cage nut in the cabinet.



7. Install another bolt and cone in the service access area of the metercase down into the cage nut in the cabinet.



COIN SLIDE REMOVAL

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

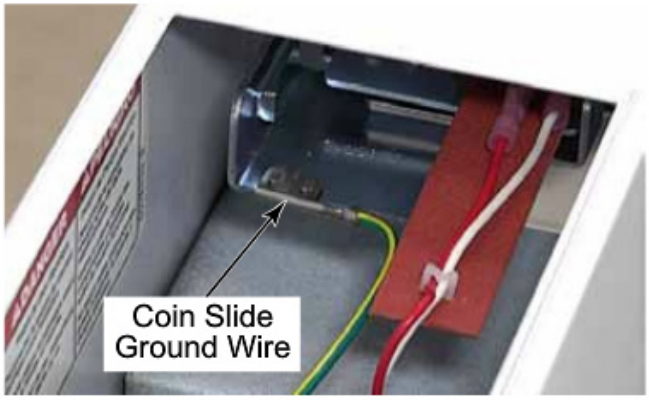
1. Unplug washer or disconnect power.

2. Unlock and remove the service access door at the top of the metercase.

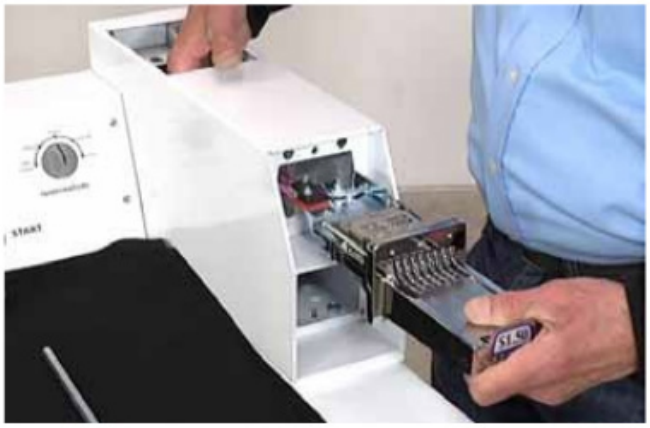
3. Press the locking tab and disconnect the coin slide wire harness connector in the service access area.

4. Remove the 5/16", or 8mm extension bolt, at top of the metercase, securing the coin slide. This is a long bolt with a star washer.

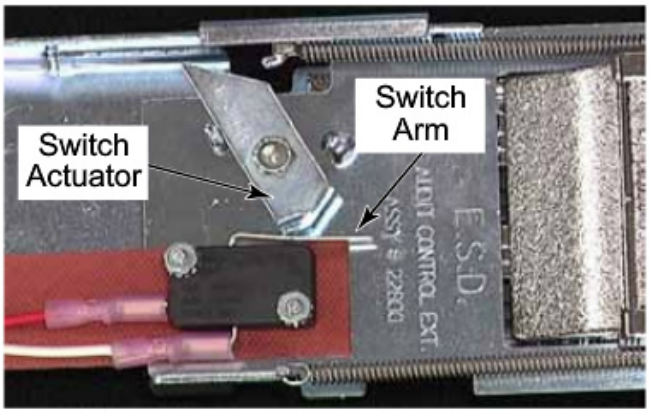
5. Press the coin slide in and remove the ground clip, from end of the coin slide, inside the service access area.



6. Lift the coin slide up slightly and pull it out of the metercase.



TECH TIP: When the coin slide is pushed in, the action causes the switch actuator to rotate, contacting the arm of the switch. It may be necessary to bend the arm of the switch so it activates the switch properly.



METERCASE REMOVAL

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Unlock and remove the service access door at the top of the metercase.

3. Unlock and remove the coin box.

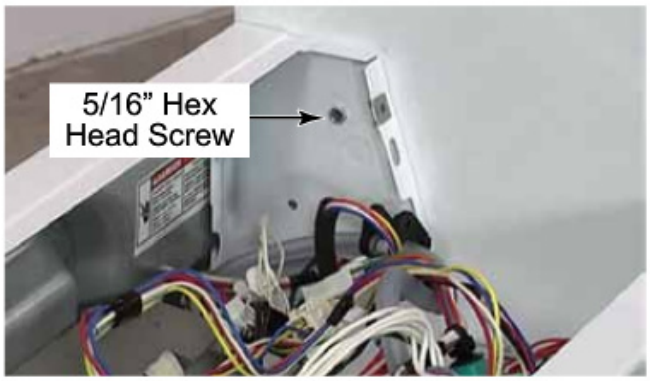
4. Remove the coin slide. (See page 3-14)

5. Remove two 1/2" or 13mm hex head bolts from inside the service access area of the metercase.

6. Remove two 1/2" or 13mm hex head bolts from inside the coin vault area at the front of the metercase.

7. Open the console and lay it forward.

8. Remove the 5/16", or 8mm hex head screw securing the metercase to the console. This screw is short with a star washer on it.



9. Remove the metercase from the washing machine.

10. Remove the pad between the metercase and the top.

11. The metercase bolts screw into brackets secured to the underside of the top. Each bracket is secured with two 5/16" hex head screws.

    NOTE: When reinstalling the metercase mounting bolts, make sure the bolts are tightened securely to avoid excess noise and vibration. Torque specification is 12-15 foot pounds.

COIN SLIDE ADAPTER PLATE

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Unlock and remove the service access door at the top of the metercase.

3. Unlock and remove the coin box.

4. Remove the coin slide. (See page 3-14)

5. Remove the 3/8" hex nut, with star washer attached, at the top of the coin vault area.

6. Remove two 3/8" hex nuts from inside the service access area, on back side of coin slide adapter plate. A long extension will be required on a ratchet to reach these nuts.

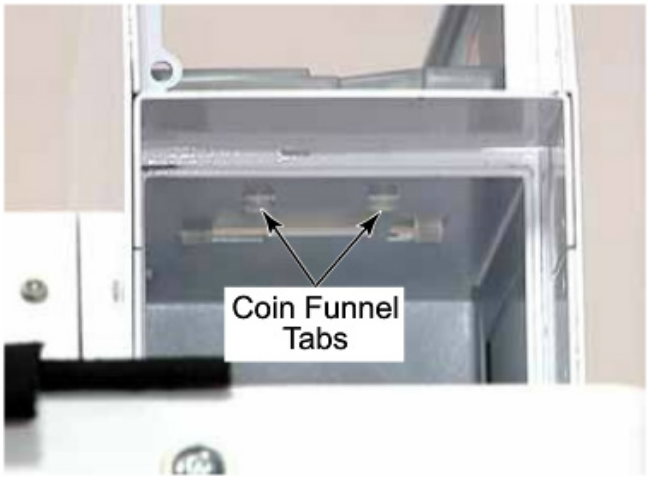
7. Pull the coin slide adapter plate away from the front of the metercase.

COIN FUNNEL

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.
2. Unlock and remove the service access door at the top of the metercase.
3. Unlock and remove the coin box.
4. Remove the coin slide. (See page 3-14)
5. Release the tabs at the top of the coin vault.



6. Remove the funnel through the service access area.

LID BUMPERS

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

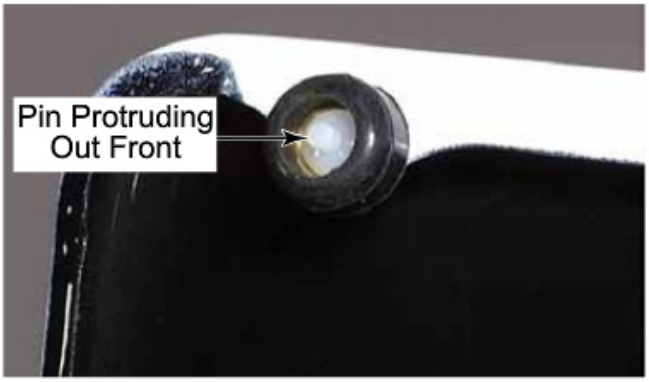
Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. The lid has two bumpers that cushion the closing of the lid.

2. The bumper is held in place with a plastic rivet.

3. Use a small flat blade screwdriver to push the center pin from the back so it is protruding out the front.



4. Pull the bumper and plastic rivet out with a pair of needle nose pliers.

5. The pin holds the four tabs pressed out to mount tightly in the hole of the lid. When the pin is pushed out the front then the tabs will release and the bumper can be pulled out of the hole

6. To reinstall the bumper, make sure the pin is pushed out the front.

7. Push the tabs through the hole in the underside of the lid.

8. Push the pin from the front until it is flush with the center. Now it is held firmly in place.

TOP PANEL OPEN

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove two T-20 security screws from the front edge.

3. There are plastic bushings behind these screws that help avoid damage to the finish of the top. These bushings have clips securing them inside the top.

4. Grasp the front edge of the top. Pull the top forward and lift to release it from the clips on the cabinet.

5. A method to support the top will be necessary. A string with hooks on either end, or a prop rod can be used.

6. Tape the lid so it will not open when lifting the top panel.

7. The top hinges up on two tabs that pass through slots in the top panel.

8. Attach hook on one end of the cord to the cabinet and the hook on the other end to the lid lock to keep the top from opening too far.

9. A prop rod could also be used instead of the cord with hooks.

COMPONENTS ACCESSIBLE UNDER TOP PANEL

⚠WARNING

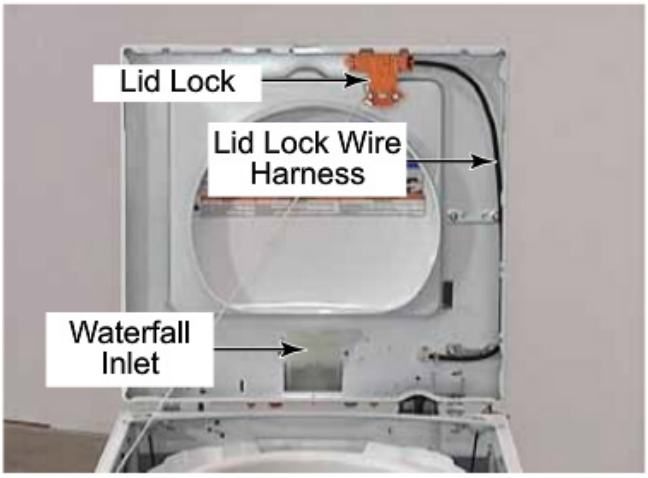
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Open the top panel. (See page 3-19)

3. Components accessible under top panel:

- Lid lock and wire harness,
- Waterfall portion of the water inlet assembly.



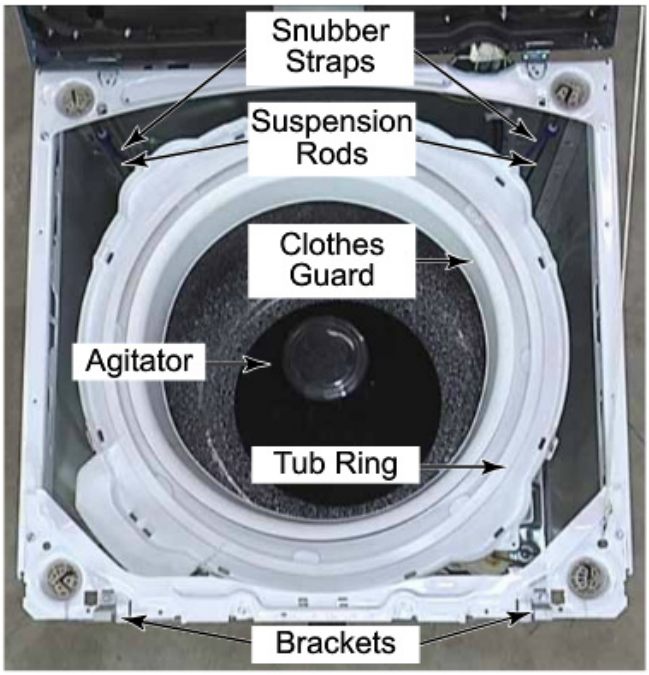
4. Components accessible in the base of the washer under the top panel include:

- Agitator,
- Tub ring,
- Clothes guard,
- Suspension rods,
- Snubber straps.

5. The top support bracket forms the top front edge of the cabinet.

6. The support can be removed or replaced by removing four 1/4" hex head screws, one in the top of each side panel and two in the middle that screw into the front support bracket.

7. Two top panel brackets are secured to the top of the top support with 1/4" hex head screws. These are what the top panel screw into.



LID LOCK

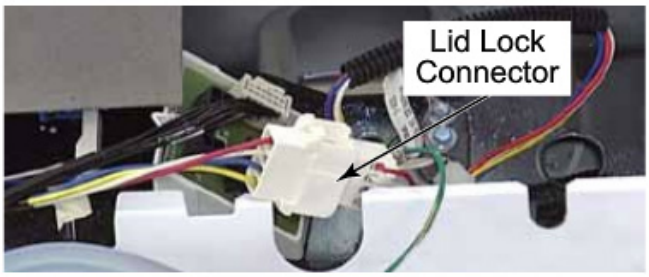
⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

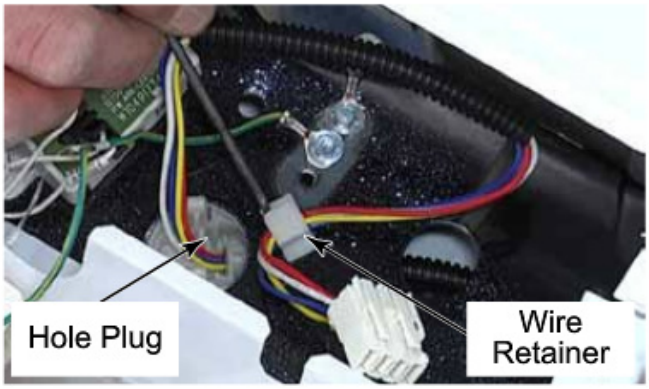
2. Open the console. (See page 3-1)

3. Press two locking tabs and disconnect lid lock wire harness connector at the right side of the console.



4. Use a small flat blade screwdriver to release the wire retainer clip in the top of the washer.

5. Release the two clips that hold the hole plug in the washer top.



6. Push the plug and wire down into the base of the washer.

7. Reinstall the console cover with two T-20 security screws so it won't fall when opening the top panel.

8. Open washer top panel. (See page 3-19)

9. Pry the two spring clips out to release the wire harness from the right edge of the top.

10. Remove two 1/4" hex head screws securing lid lock to underside of top. These screws have a shoulder and rubber O-ring.

TECH TIP: When reinstalling these screws, tighten until snug, then loosen 1/4 turn. Do not overtighten theses screws. The bezel and lock assembly must be able to move slightly so latch can be properly positioned every time lid is opened and closed.

11. The lid lock is replaced as one component.

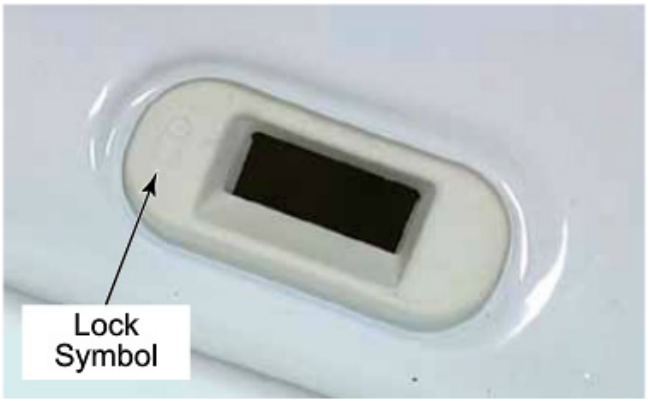
12. Lower the top panel of the washer and open the lid.

13. Remove bezel on the washer top, under the lid. The bezel has posts that protrude down through holes in the lid lock assembly.

14. When reinstalling the bezel, the locking edge with the bevel should be toward the front. The lock symbol will be toward the center of the washing machine.

NOTE: Make sure the O-rings are present when securing the lid lock assembly.

TECH TIP: When reinstalling bezel, tape bezel in place to help with the reinstallation of the screws from under the washer top.



15. After selecting a cycle and pressing the Start button, the lid will lock only during the spin portion of the cycles.

LID STRIKE

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

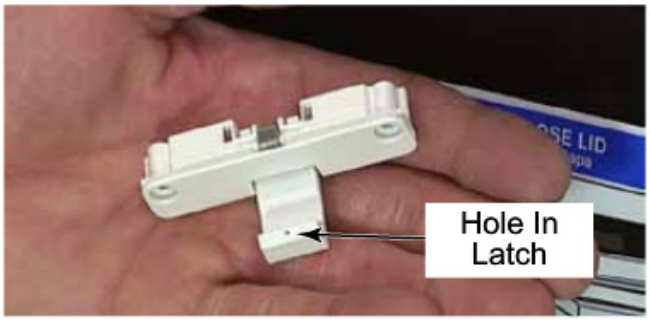
1. Lift the lid

2. Remove two T-15 screws securing the strike to the underside of the lid.

3. Slide the strike down and out of the lid

NOTE: The magnet in strike energizes reed switch in lid lock when the lid is closed.

TECH TIP: If lid lock is not sensing latch correctly, check that tiny hole in latch is not clogged or covered. Clean this hole out with a toothpick or other small pointed object.



TOP PANEL REMOVAL

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

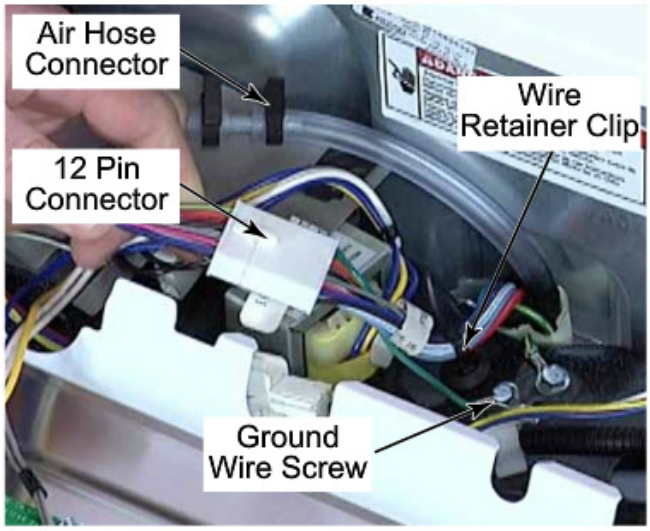
2. Open the console. (See page 3-1)

3. Remove the 1/4" hex head screw securing the ground wire from the cabinet of the washing machine. Ground wire screws have a pointed tip and very fine threads.

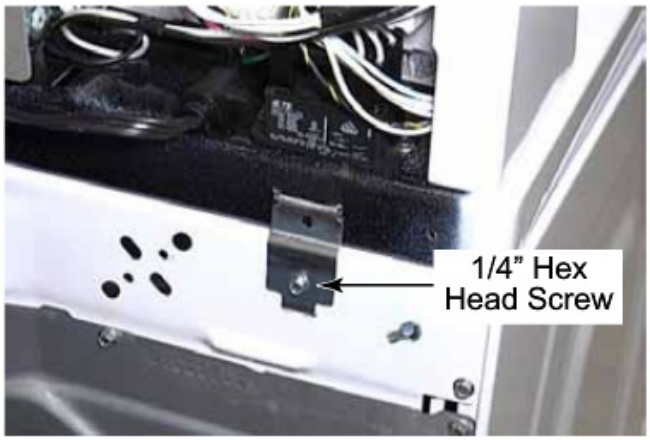
4. Pull one side of the pressure switch air hose off the ribbed connector.

5. Press the locking tab and disconnect the 12 pin connector.

6. Pull the wire retainer clip out of the hole in the top of the washer.



7. Remove the 1/4" hex head screw securing the hinge tab on the back of washer.



8. Pull the bottom of the hinge tab away from the washer and twist the top of the tab to remove it from the slot in the top panel. Repeat this procedure with the other hinge tab.

9. Lift top panel up and remove the top panel.

AGITATOR

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Open the top panel. (See page 3-19)

3. Place a flat blade screwdriver in the slot below the cap. Pry the cap off the agitator.

4. Remove the 7/16" hex head bolt securing the agitator to the center shaft.

   NOTE: Hold the agitator to keep it from turning while removing the bolt because there is no brake on this washing machine

5. This bolt has a rubber washer on it.

6. Pull agitator up off the shaft and remove it.

7. Pull rubber seal off the shaft. A new rubber seal will be included with a new agitator.

CLOTHES GUARD

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Open the top panel. (See page 3-19)

3. Grasp top edge and pull in toward agitator and up to release clips that hold the clothes guard in place.

NOTE: This may need to be done in more than one place around the clothes guard to release all the clips.

4. Remove the clothes guard.

TUB RING

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Lift the tabs securing the tub ring to the outer tub. There are 8 tabs around the outer tub that need to be released.

3. Lift the tub ring to remove it.

NOTE: When reinstalling tub ring, place feature for old bleach dispenser in front left corner for proper orientation of tub ring. There is also the word “Front” molded into underside of tub ring for proper orientation.

SPIN BASKET

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Open the top panel. (See page 3-19)

3. Remove the tub ring. (See page 3-26)

4. Remove the agitator. (See page 3-24)

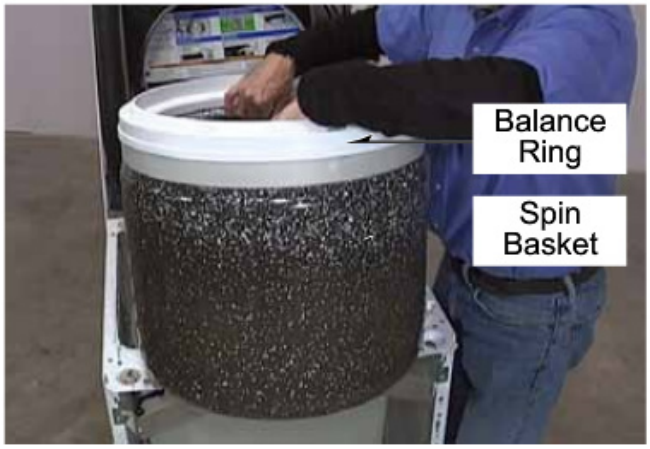
5. Place a spanner wrench on the spanner nut. Tap the spanner wrench with a mallet until the nut is loose enough to spin by hand. Spanner nut is not reverse thread.

6. Remove the spanner nut.

   NOTE: When reinstalling the spanner nut, place the cone side down.

7. Grasp the top edge of the spin basket and lift it straight up out of the outer tub.

8. The balance ring is attached to the top of spin basket. It is not replaceable by itself.



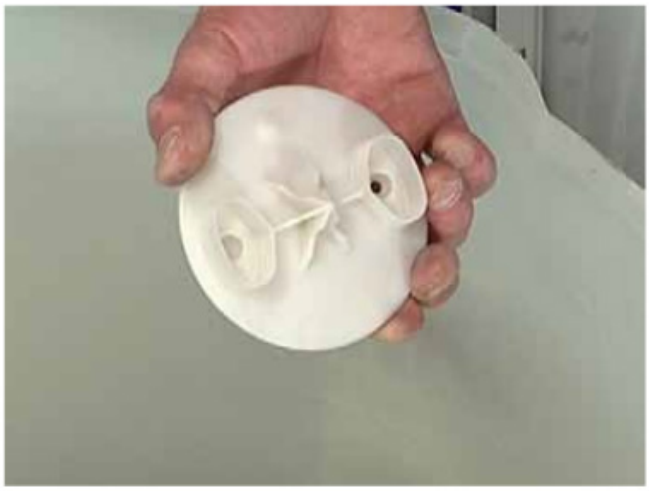
9. Below the spin basket is the drive block. Pull the drive block up to remove it from basket drive.

10. Reinstall the drive block so the notches are on the tabs of the basket drive.

11. There is a pump cover in the bottom of the outer tub that is accessible after removing the spin basket. Remove the 1/4" hex head screw.

12. Lift the pump cover to remove it.

NOTE: The cone shape on the bottom fits down into the opening of the pump to block large items from entering the pump.



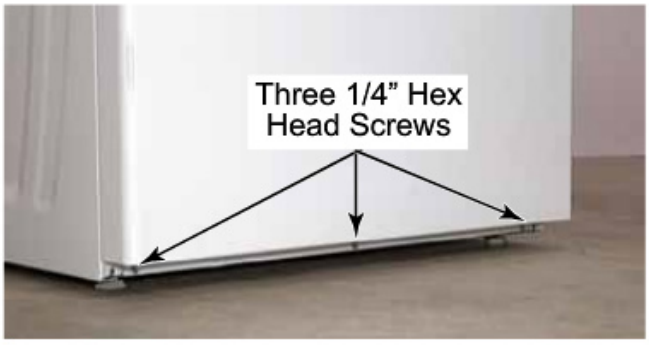
FRONT PANEL

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove three 1/4" hex head screws along the bottom edge.



3. Grasp the front panel from the sides and pull the bottom edge out.

4. Pull the top edge down to release the clips from the top panel.

5. Remove the front panel.

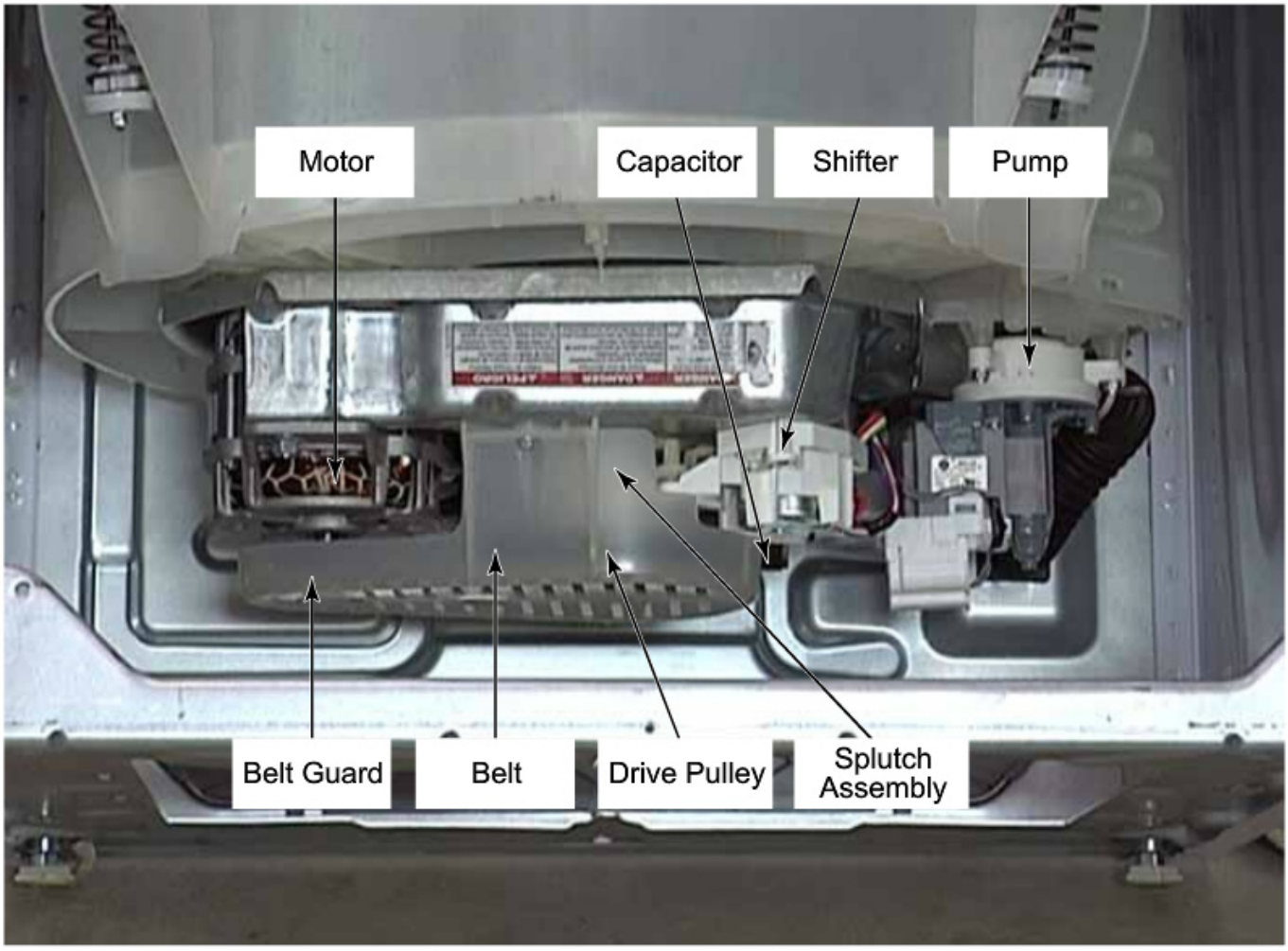
NOTE: The front support bracket, behind the front panel, gives rigidity to the center portion of the top and the cabinet, and it helps hold the front panel in place. It does allow the washer to be run without the front panel in place for testing purposes.

6. The front support bracket can be removed or replaced by removing four 1/4" hex head screws, one in each side panel and two in the middle from the top support bracket.

COMPONENTS ACCESSIBLE BEHIND FRONT PANEL

1. Components accessible behind the front panel include:

- Pump,
- Capacitor,
- Belt guard,
- Shifter,
- Belt,
- Drive pulley,
- Splutch assembly,
- Motor.



TUB SUSPENSION RODS

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the tub ring. (See page 3-26)

3. Remove the front panel. (See page 3-29)

4. Lift snubber strap up off post on side of tub.

5. Lift the suspension rod up.

6. Rotate ball at the top to allow rod to align with the slot.

7. Slide ball up off the suspension rod.

8. Lower suspension rod down through hole in cabinet top brace.

9. Lift bottom of tub and pull suspension rod down through hole at bottom of tub.

10. Repeat with the other suspension rods.

11. Inspect bearing cups that suspension balls rest in. Replace them if they appear worn.

TECH TIP: If the bearing cups and suspension balls become noisy during movement, lubricate bearing cups with a few drops of mineral oil only.

COMPONENTS ACCESSIBLE FROM THE BOTTOM

⚠WARNING

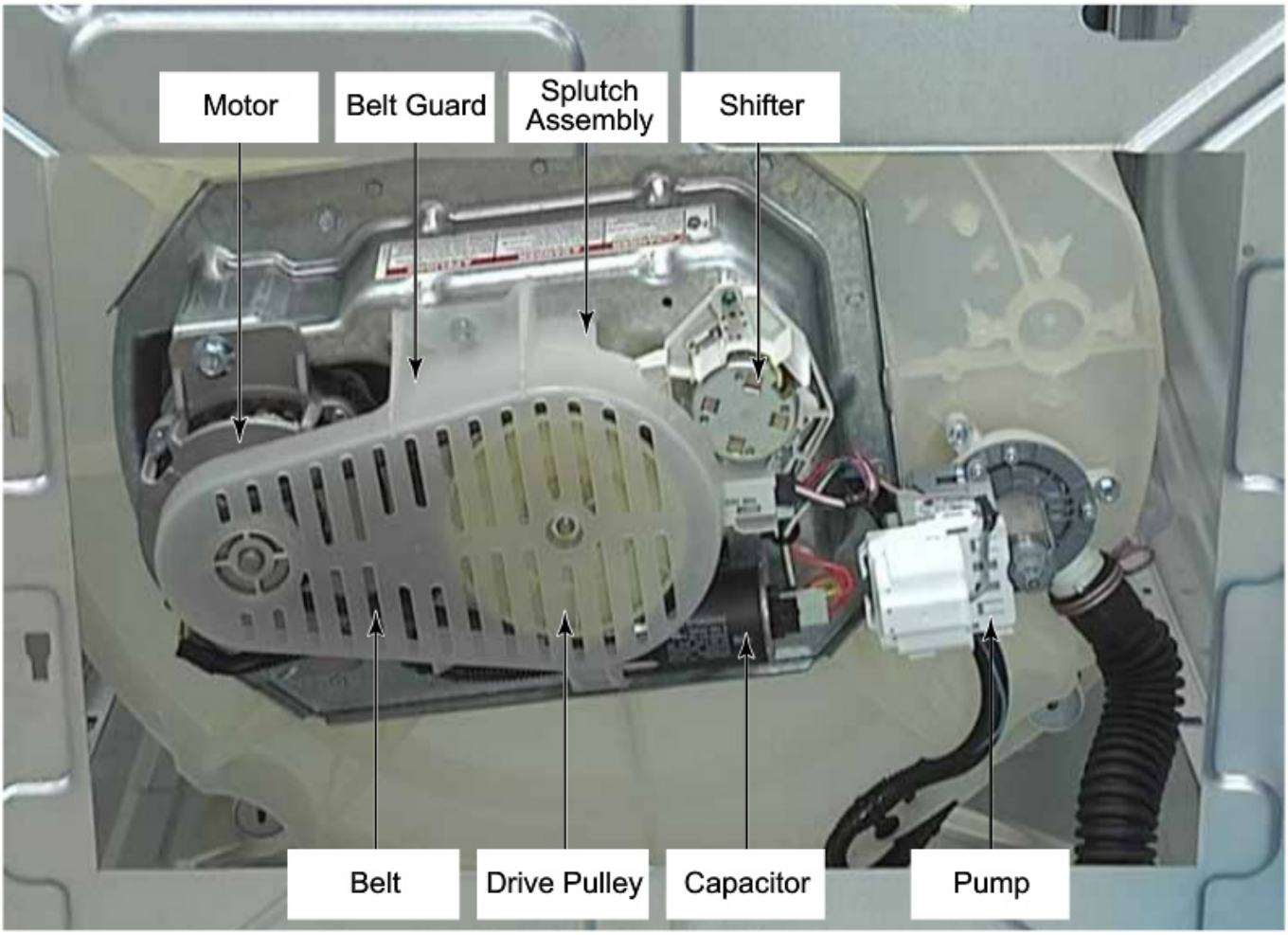
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Lay the washing machine on its back. Use corner posts or other material to lay the washer on.

3. Components accessible from the bottom include:

- Pump,
- Shifter,
- Capacitor,
- Belt guard,
- Belt,
- Motor,
- Drive pulley,
- Splutch assembly.



DRIVE BELT

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

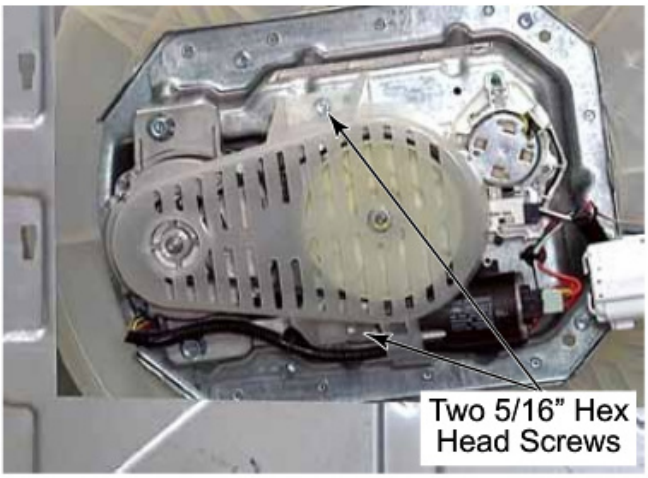
Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Remove two 5/16" or (8mm) hex head screws securing the belt guard to the transmission housing.



4. Remove the belt guard.

5. To remove the belt, grasp the belt and work it off the edge while turning the pulley.

NOTE: The belt is ribbed on the inside which faces the pulley.

TECH TIP: When reinstalling the belt make sure the belt is centered, not riding up on the top or bottom edge of the motor pulley, and reinstall the belt guard.

CAPACITOR

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Remove the belt guard.

4. Pull wire harness connector off capacitor.

5. Lift the bottom end of the capacitor to release the tab.

6. Twist the capacitor approximately 45 degrees and pull it out of the hole in the transmission housing.

DRIVE MOTOR

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

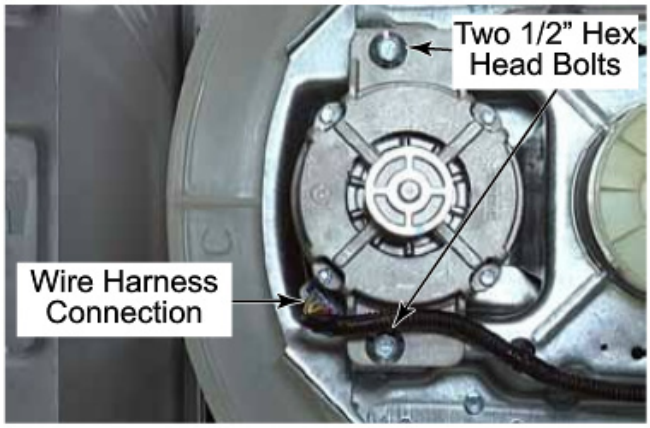
1. Unplug washer or disconnect power.

2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Remove the drive belt. (See page 3-33)

4. Press the locking tab and disconnect the wire harness to the motor.

5. Remove two 1/2" or 13mm hex head bolts securing motor to transmission housing.



6. Support the motor when removing the second bolt.

7. Pull the motor out of the mounting hole in the transmission housing.

DRIVE PULLEY

⚠WARNING

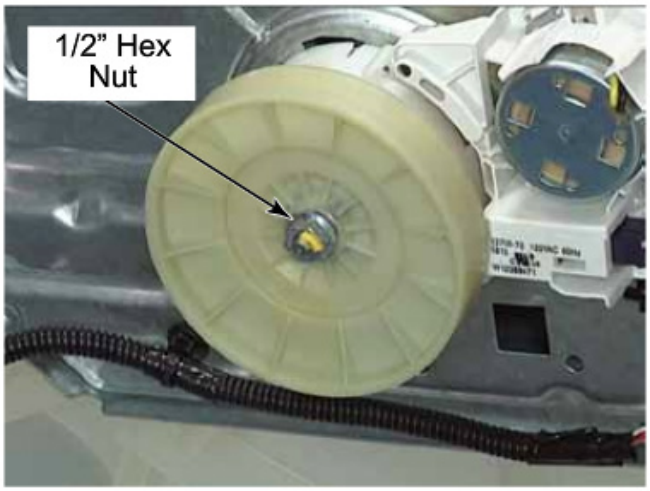
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Remove the drive belt. (See page 3-33)

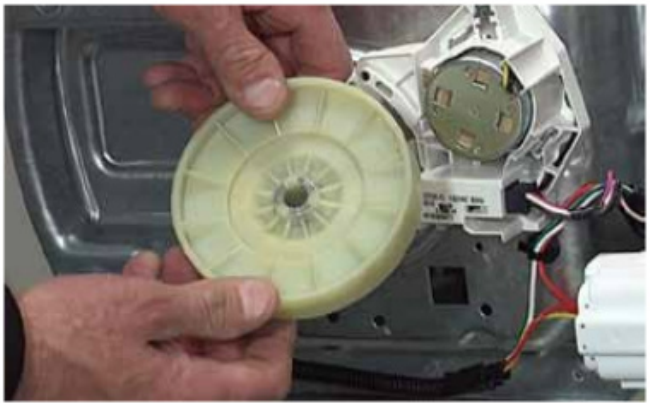
4. Hold the pulley to keep it from turning and remove the 1/2" or 13mm hex nut securing the pulley.

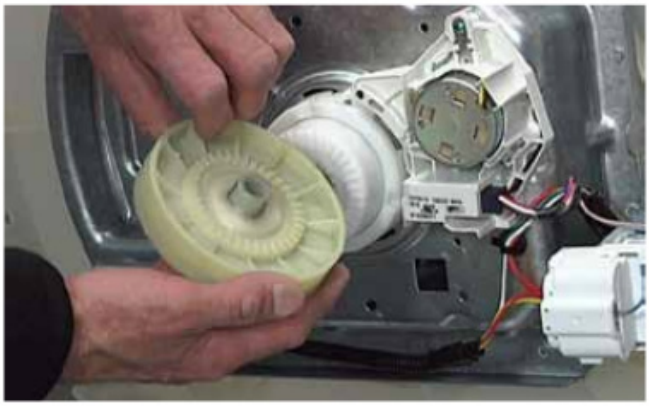


TECH TIP: There is Loctite on this nut. It may be necessary to use a strap wrench to hold the pulley, to remove the nut.

5. Make sure to apply Loctite when reinstalling the nut.

6. Pull the pulley off the splined shaft.





SHIFTER

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

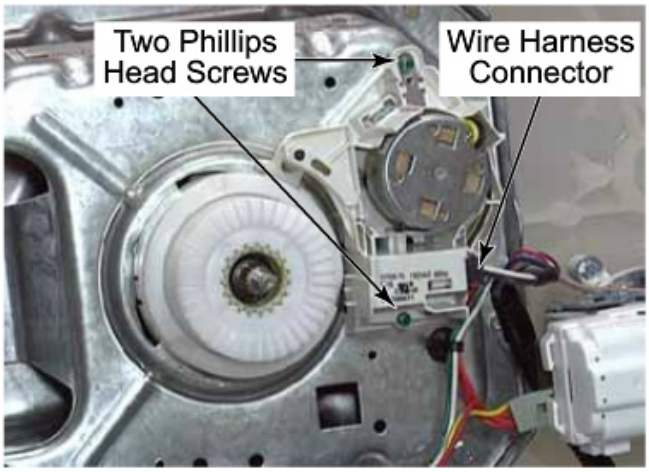
1. Unplug washer or disconnect power.

2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Remove the drive pulley. (See page 3-36)

4. Press the locking tab and disconnect the wire harness from the shifter.

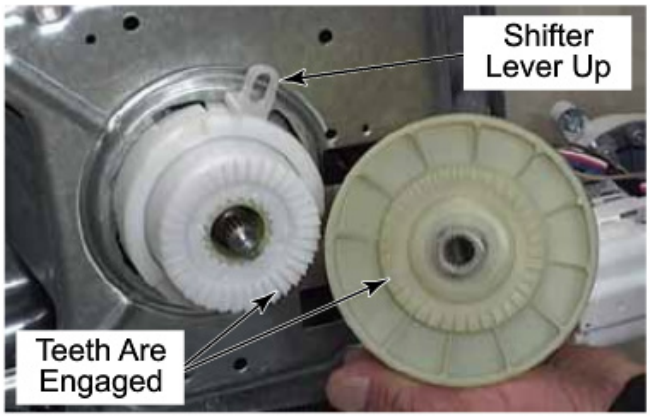
5. Remove two Phillips head screws securing shifter to the transmission housing.



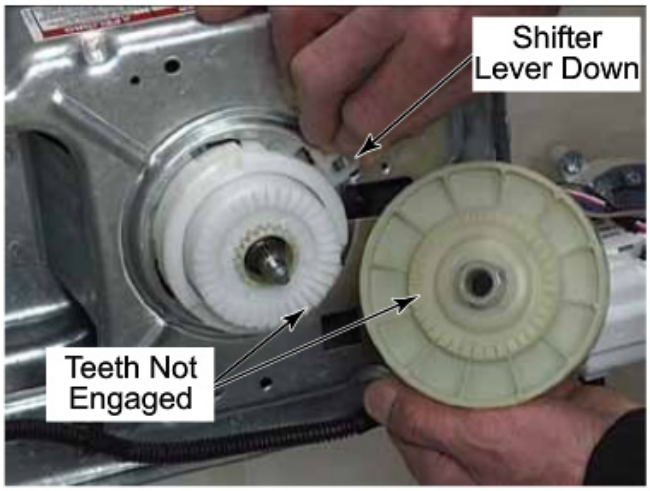
6. Remove the shifter.

NOTE: The shifter motor rotates a cam, attached to the shifter arm which moves between two positions. The shifter arm moves the transmission lever which engages or disengages the transmission creating agitate and spin.

The washing machine is in spin when the shifter is up in this position. The teeth of the splutch are engaged with the teeth of the pulley and the motor turns the pulley in a direction for spin.



When the shifter pulls the lever down it disengages the teeth. The washing machine is in agitate. The length of each stroke is controlled by the CCU. There are three different patterns.



SPLUTCH ASSEMBLY

⚠WARNING

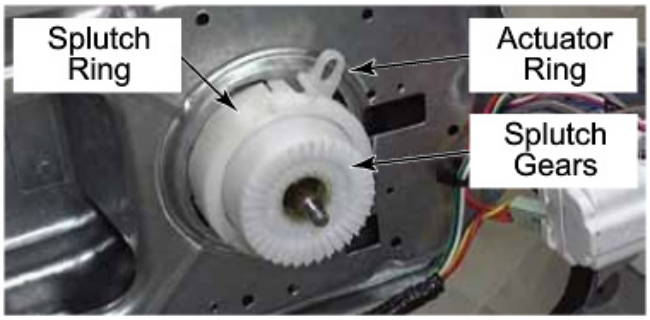
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

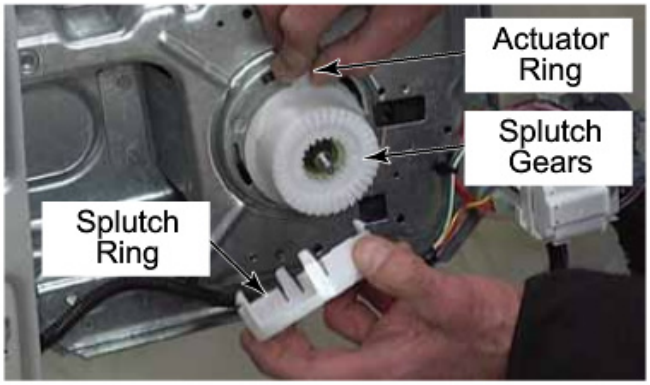
2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Remove the shifter. (See page 3-37)

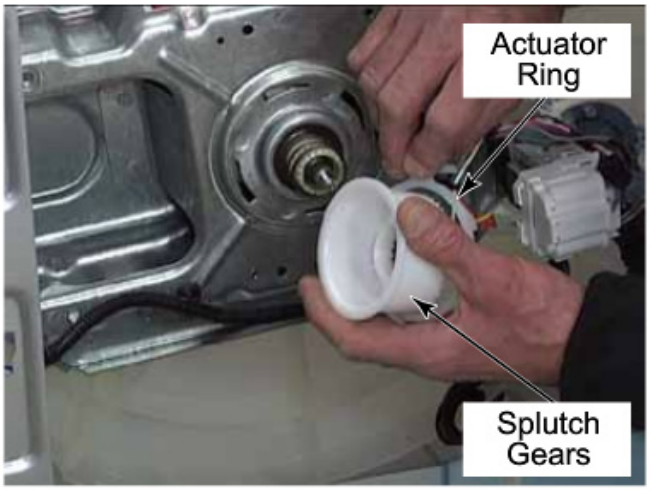
4. The actuator ring fits through a slot in the splutch ring.



5. Rotate splutch ring to release four tabs from slots in the transmission housing. The splutch ring slides off the splutch gears.



6. The actuator ring slides off of the splutch gears.



7. Remove the spring from the shaft after removing the splutch assembly.

DRAIN PUMP

⚠WARNING

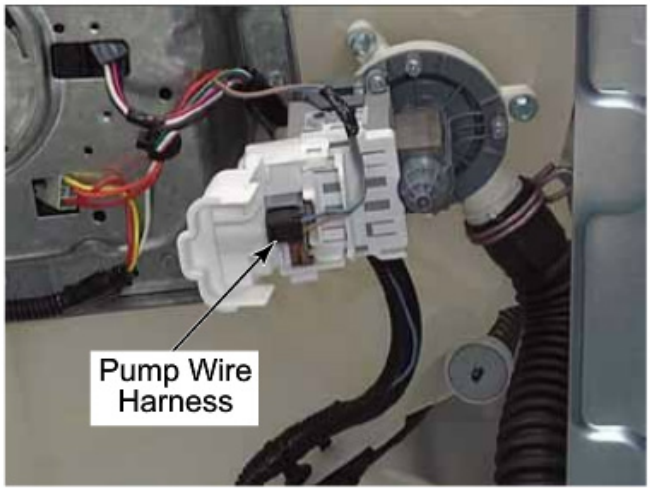
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Pull up on the wire cover to open it. There are small tabs on the sides of the cover that release from slots on the base.

4. Press the locking tab and disconnect the wire harness.

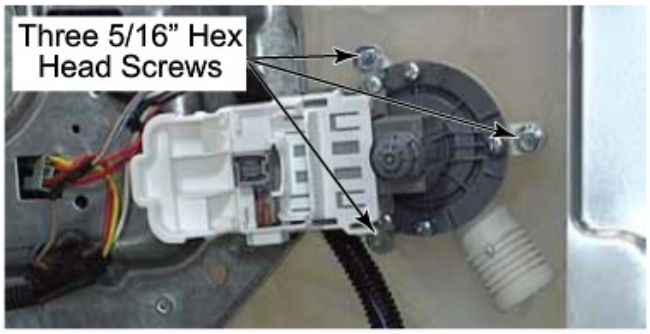


5. Squeeze the Corbin style clamp and slide it down the hose.

   NOTE: Not all the water will be removed, so be ready to catch remaining water in a container.

6. Pull the outlet hose off the pump.

7. Remove three 5/16" hex head screws securing the pump to the bottom of the outer tub. These screws have high/low threads for use in plastic.



8. Pull pump out of hole in outer tub.

   NOTE: The drain pump has no serviceable parts, it is replaced as an assembly.

DRAIN PUMP OUTLET HOSE

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the front panel (See page 3-29) or lay the washing machine on its back.

3. Squeeze the Corbin style clamp and move it down the hose.

NOTE: Not all the water will be removed so be ready to catch the remaining water in a container.

4. Pull the outlet hose off the pump.

5. In the lower back corner of the washer, use a large flat blade screwdriver to release the tab at the top of the pump outlet hose fitting.

6. Lift the bottom of the fitting up off the edge of the cutout and remove the hose.

7. The tab on the bottom of the hose fitting fits over the edge of cutout in the back panel.

TRANSMISSION

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

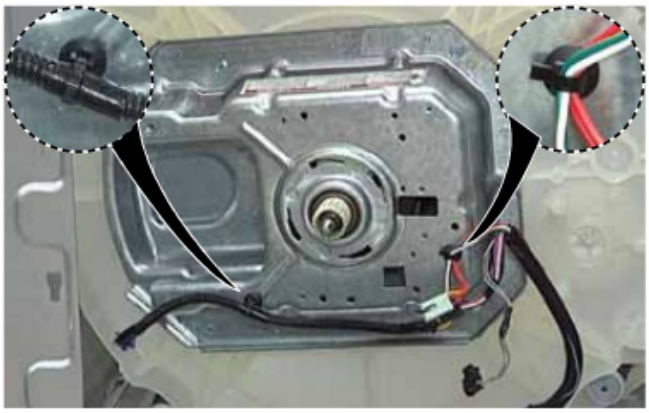
2. Remove the agitator. (See page 3-24)

3. Loosen the spanner nut. (See page 3-27)

4. Lean the washer or lay it on its back.

   NOTE: We have removed all components from the transmission, but only the pump has to be removed to remove the transmission.

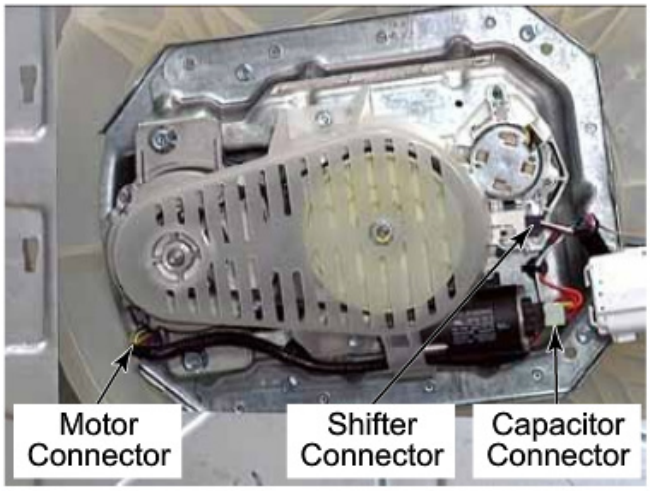
5. If removing the transmission with all the components on it, pull the two wire retainer clips out of the holes in the transmission housing. New wire retainer clips are supplied with a new transmission.



6. Disconnect the wire harness connector from the capacitor.

7. Disconnect the wire harness connector from the shifter.

8. Disconnect the wire harness connector from the motor.



9. Remove four 10mm hex head screws securing the transmission housing to the outer tub. These screws have high/low thread for use in plastic.

10. Support the transmission. Use a large flat blade screwdriver to pry along the top edge of the transmission until it is loose.

11. Slide the transmission and basket drive out of the outer tub and spin basket.

12. The tub seal should come out on the transmission shaft.

13. This is seal orientation as it faces the tub.

14. This is seal orientation as it faces the transmission.

15. The seal is pressed onto the transmission shaft at the factory. A new transmission will come with a new seal pressed on.

OUTER TUB

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

2. Remove the spin basket. (See page 3-27)

3. Remove the 1/4" hex head screw securing the wire harness cover to the back of the washing machine.

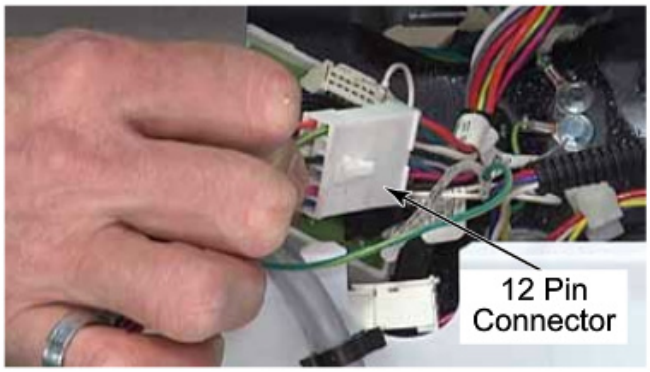
4. Push up slightly on the bottom of the cover and pull the bottom edge out to release the tabs of the cover from the slots in the back panel. Pull down to remove the top edge of the cover from the upper back panel.

5. Release the clip securing the wire harness and pressure switch air hose. Use a small flat blade screwdriver and separate the clip where they lock together.

6. Release clamp on pressure switch air hose connection in console. Press the two halves of the clamp apart and open the clamp.

7. Pull pressure switch air hose off hose barb.

8. Lift locking tab and disconnect 12 pin connector for the lower wire harness.



9. Pull the wire retainer clip out of the hole in the top of the washer.

10. Push the wires and tube out the hole at the back of the console.

11. Push the wires and tube into the cabinet through the hole in the back panel.

12. Open the top panel. (See page 3-19)

13. Use a small flat blade screwdriver to release ground wire clip, from back edge of washer. There are two ground wire clips, release the ground wire bundled with the wire harness and pressure switch air hose.

TECH TIP: When reinstalling ground wire clip, squeeze clip together with pliers before reinstalling clip to make sure it is tight.

14. Remove the front panel. (See page 3-29)

15. Tilt or lay washing machine on its back.

16. Remove the transmission and basket drive assembly. (See page 3-41)

17. Remove the outlet hose from the pump. (See page 3-40)

18. Remove drain pump from outer tub. (See page 3-39)

19. Stand the washing machine upright.

20. Lift a suspension rod and push ball down.

21. Rotate the ball to allow the rod to align with the slot and slide out of the ball.

22. Lower the suspension rod down through the hole in the cabinet top brace.

23. Hook the top of the rod over the edge of the outer tub.

24. Repeat with three other suspension rods.

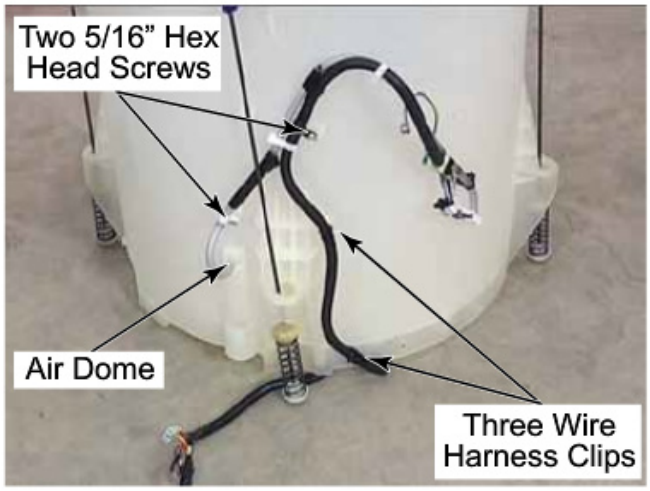
25. When removing the last suspension rod, support the outer tub so it does not drop.

26. Remove the outer tub and suspension rods through the front of the washer cabinet.

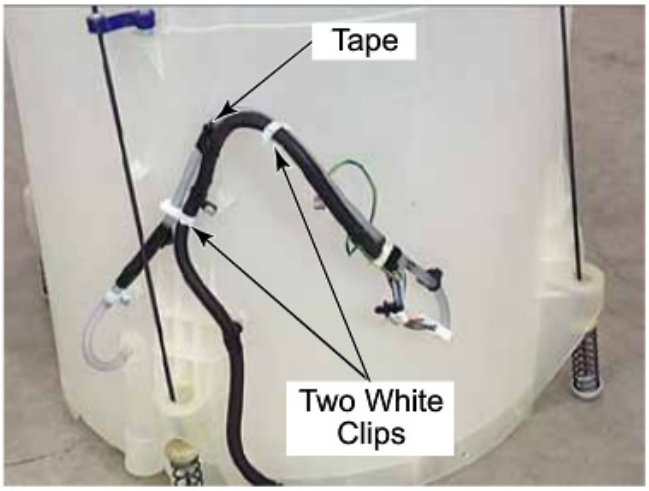
27. The wire harness is attached to the side of the outer tub with two 5/16" or (8mm) hex head screws. These screws have high/low threads for use in plastic.

28. Pull air hose off air dome on the side of the outer tub.

29. Pull three wire retainer clip out of holes in the outer tub. One on the side and two at the bottom of the outer tub.



30. The air hose is attached to the wire harness with two clips and tape. To remove the hose from the wire harness pry open the two white clips and remove the tape.



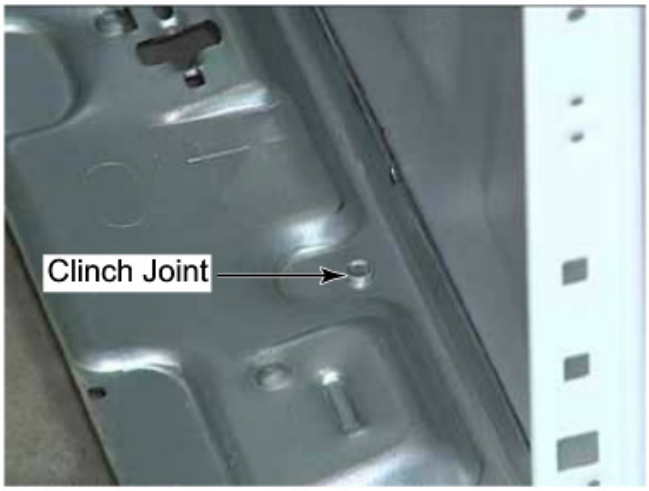
CABINET

⚠WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.

NOTE: The cabinet has 5 pieces. The two sides and base come together and cannot be replaced separately. They are permanently attached using clinch joints.



2. To replace the cabinet, remove the top of the washing machine. (See page 3-23)

3. Remove the front panel. (See page 3-29)

4. Remove the outer tub from the cabinet. (See page 3-43)

5. Remove seven 1/4" hex head screws securing the back panel to the cabinet.

6. Remove the front support bracket. (See page 3-29)

7. Remove the top support bracket. (See page 3-20)

8. Unscrew the feet from bottom of cabinet.

COMPONENT TESTING

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

WATER VALVES TESTING

1. Unplug washer or disconnect power.

1. Open the console. (See page 3-1)

2. Check the wire harness connections to the water inlet valves.

3. Remove connector J3 from the CCU.

4. Check resistance of the valve coils across the following J3 connector pinouts:

   Hot Valve J3 Pins 1 & 4
   Cold Valve J3 Pins 1 & 5

5. Resistance should be 890 - 1.3kΩ

6. If resistance readings are tens of ohms outside of range, replace valve assembly.

DRAIN PUMP MOTOR TESTING

1. Unplug washer or disconnect power.

2. Check the wire connection to the pump.

3. Open the console. (See page 3-1)

4. Remove connector J16 from the CCU.

5. Check resistance of the drain pump motor across the following J16 connector pinouts:

   Drain pump, J16 Pins 2 & 3

6. Resistance should be 14 - 25Ω

7. If resistance readings are outside of range, verify the pump is free from obstructions.

8. If readings are still out of range, replace the drain pump.

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

DRIVE MOTOR TESTING

1. Unplug washer or disconnect power.
2. Check the wire harness connection to the drive motor.
3. Open the console. (See page 3-1)
4. Remove connector J16 from the CCU.
5. Check resistance of the drive motor across the following J16 connector pinouts:

   CCW Winding J16 pin 6 to Motor relay pin 2
   CW Winding J16 pin 7 to Motor relay pin 2

6. Resistance should be 3.5 - 6Ω
7. If resistance readings are out of range replace the drive motor

MOTOR CAPACITOR TESTING

1. Unplug washer or disconnect power.
2. Remove the front panel (See page 3-29) or lay the washing machine on its back.
3. Disconnect the wire harness connector from the capacitor terminals.
4. Discharge the capacitor by touching each of the terminals with a 20kΩ (red, black, orange) resistor to ground, or short the two terminals of the capacitor together.
5. Touch the ohmmeter test leads to the capacitor terminals.
6. The meter should steadily increase in resistance.
7. If the capacitor is either shorted or shows an open circuit (infinite Ω) reading, replace the capacitor.

⚠WARNING

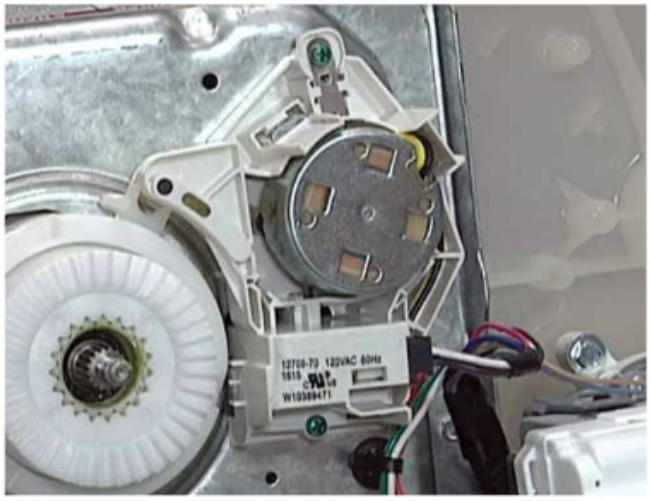
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

SHIFTER MOTOR TESTING



1. Unplug washer or disconnect power.

2. Check the wire harness connection to the shifter.

3. Open the console. (See page 3-1)

4. Remove connector J16 from the CCU.

5. Check resistance of the shifter across the following J16 connector pinouts:

   Shifter, J16 Pins 1 & 2

6. Resistance should be 2k - 3.5kΩ

7. If resistance readings are out of range replace the drive motor.

LID LOCK TESTING

1. Unplug washer or disconnect power.

1. Open the console. (See page 3-1)

2. Remove connector J15 from the CCU.

3. Check resistance of the lid lock across the following J15 connector pinouts:

   Lock Switch Solenoid: J15 Pins 1 & 3
   Resistance should be 85 - 155Ω

   Lock Switch: J15 Pins 3 & 4
   Locked = 0Ω
   Unlocked = open circuit (infinite Ω)

   Lid Switch: J15 Pins 3 & 2
   Lid Closed = 0Ω
   Lid Open = open circuit (infinite Ω)

4. If switch measurements do not match the values shown above for unlocked (or locked) condition, replace the lid lock mechanism.

⚠WARNING

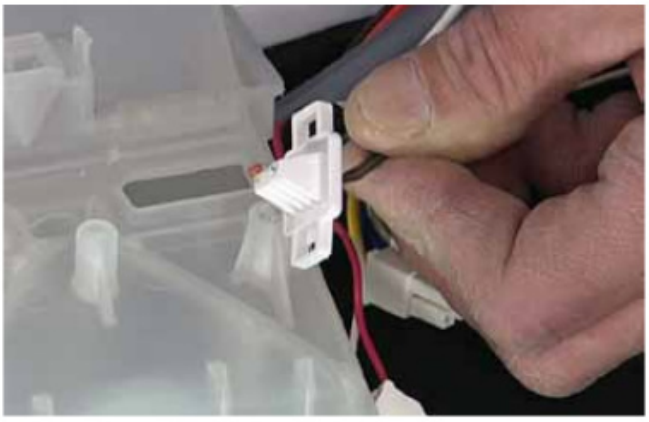
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

THERMISTOR TESTING



1. Unplug washer or disconnect power.
2. Open the console. (See page 3-1)
3. Remove connector J3 from the CCU.
4. Check resistance of the thermistor across connector J3 Pins 9 & 10
5. Verify the approximate resistance, shown in table, is within ambient temperature range.
6. If reading shows an open circuit (infinite Ω) or close to zero, replace the thermistor.

THERMISTOR RESISTANCE		
Approx. Temperature		Approx. Resistance
F°	C°	(KΩ)
32	0	163
41	5	127
50	10	100
59	15	79
68	20	62
77	25	50
86	30	40
95	35	33
104	40	27
113	45	22
122	50	18
131	55	15
140	60	12
149	65	10

⚠WARNING

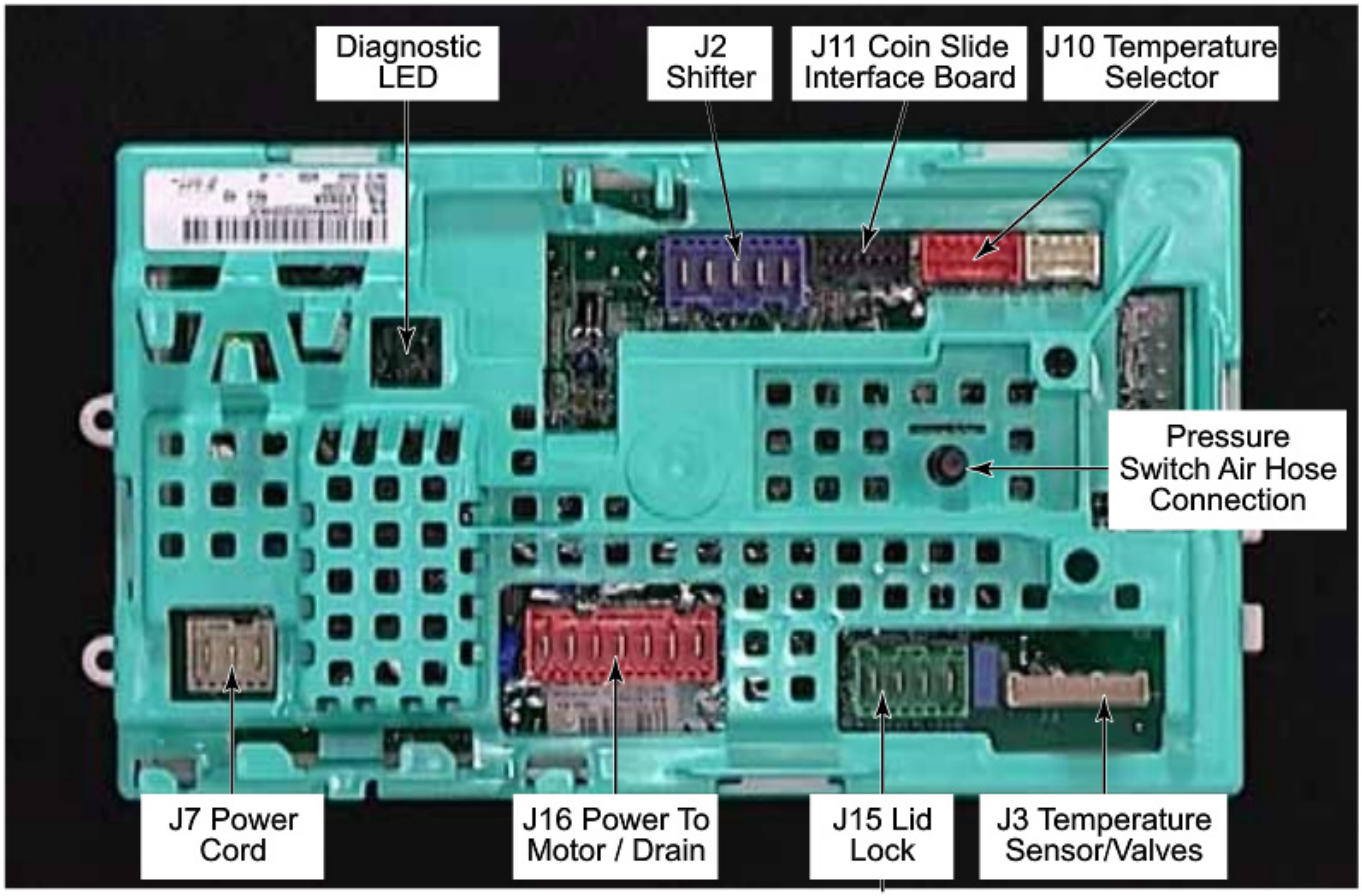
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

CENTRAL CONTROL UNIT CONNECTIONS



For pinout information refer to the Troubleshooting Test Section. (See page 5-5)

— NOTES —

DIAGNOSIS & TROUBLESHOOTING

⚠ DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

Before Servicing, check the following:

- Make sure there is power at the wall outlet.
- Has a fuse blown or circuit breaker tripped? Was a regular fuse used? A time-delay fuse is required.
- Are both hot and cold water faucets open and water supply hoses unobstructed?
- All test/checks should be made with a VOM (volt-ohm-milliammeter) or DVM (digital-voltmeter) having a sensitivity of 20,000Ω per volt DC or greater.
- Resistance checks must be made with washer unplugged or power disconnected.
- **IMPORTANT:** Avoid using large diameter probes when checking harness connectors as the probes may damage the connectors upon insertion.
- Check all harnesses and connections before replacing components. Look for connectors not fully seated, broken or loose wires and terminals, or wires not pressed into connectors far enough to engage metal barbs.
- A potential cause of a control not functioning is corrosion or contamination on connections. Use a ohmmeter to check for continuity across suspected connections.
- Perform the service diagnostic tests before going to specific troubleshooting tests. (See page 5-2)

SERVICE DIAGNOSTIC TEST MODES

These tests can be used to do a quick and overall checkup of the washer before going to specific troubleshooting tests.

To activate the service diagnostic test modes:

1. Start with the cycle selector switch at the 12:00 position.

2. Turn the cycle selector switch one click to the left, two to the right, one to the left, and one to the right.

   NOTE: If not done correctly, turn the cycle selector switch to the 12:00 position and wait for 5 seconds before attempting to access service diagnostics again.

   TECH TIP: To assist in proper timing when turning the cycle selector switch, tap the top of the washer between each turn. This gives about a half a second between each step in the process.

3. Upon successful entry into service diagnostics, all LED's should be flashing.

4. All modes proceed in order from start to finish. If a mode is passed it will be necessary to start from the beginning to get to that mode again.

5. To enter any of the service diagnostic tests, press Start when the correct LED indicator lights are lit.

6. Since status LED names may vary between makes and models each LED is assigned a value. Starting at the RIGHT, the Lid locked LED is not used. Working to the LEFT, the value of the remaining LED's is 1, 2, 4, 8 and 16. For complete details about each diagnostic test, refer to the tech sheet.

DIAGNOSTIC TEST MODES

MODE	STATUS LEDs			
(Status LED names may vary between makes and models)	SOAK/ WASH	RINSE	FINAL SPIN	DONE
Fault Code Display Mode				1
Quick Overview Test Mode			2	
Manual Overview Test Mode			2	1
Calibration Mode		4		
Drain & Spin Cycle		4		1
UI Test Mode		4	2	
SW Version Display Mode		4	2	1
Factory Diagnostics Mode	8			
Tachometer Verification Mode	8			1
Dry Factory Diagnostics	8		2	
Factory Cal Test Cycle	8		2	1
Clean Washer Cycle	8	4		

- **View fault code mode**:
  Enter service diagnostics, then toggle the cycle selector switch one time. The 1 value LED should be lit. To enter 'view fault codes', press Start. The status LED's should flash on and off. To advance to the first fault code, toggle the cycle selector switch. To read the fault codes: when the LEFT LED is lit the F code is displayed. Add the value of the other LEDs that are lit together to determine the F code. When the LEFT LED is off the E code is displayed. Add the value of the LEDs that are lit together to determine the E code. To view the second fault code, toggle the cycle selector switch again. If only the LEFT LED is flashing, there are no more fault codes in memory. To view the third fault code, toggle the cycle selector switch again. To view the fourth fault code, toggle the cycle selector switch again. To clear fault codes and exit service diagnostics, press and hold the Start button for 3 to 5 seconds.

  TECH TIP: Make sure to record the fault codes before clearing them. Refer to the tech sheet and the service manual for the proper procedure to diagnose and repair the problem indicated by the fault codes.

SERVICE DIAGNOSTIC TEST MODES (CONTINUED)

- **Quick overview test mode:**
  Enter service diagnostics, then toggle the cycle selector switch two times. The 2 value LED should be lit. Press Start to enter the 'Quick overview test mode'. The 'Lid Locked' LED should be lit, and the lid should lock. This test mode will automatically advance through each step in the washing process. Press Start to manually advance to the next step. The LED's will indicate what step the test is on. At the end of the test the lid will unlock and exit diagnostic mode. To manually exit the test at any time, press and hold the Start button for 3 to 5 seconds.

- **Manual overview test mode:**
  Enter service diagnostics. Toggle the cycle selector switch three times. The 1 and 2 value LEDs should be lit. Press Start to enter the 'Manual overview test mode'. All LED's will turn off. Press Start for the first test, lid lock. The lid lock LED should turn on and the lid should lock. Press Start again to unlock the lid. Toggle the cycle selector switch once to move to the next test, cold water valve. Press Start to activate the cold water valve. Press Start to stop the test. Refer to the tech sheet for all of the tests and their indications. Press and hold Start for 3 to 5 seconds to exit 'Manual overview test mode' and Service diagnostics.

- **Calibration mode:**
  Enter service diagnostics. Toggle the cycle selector switch four times to advance to the 'Calibration mode'. The 4 value LED should be lit. Press Start to run this cycle anytime the CCU or any drive component is replaced, or if the basket is removed for any reason. The calibration mode sets parameters in the CCU for an empty basket, so when a cycle is run, it can more accurately measure the load.

- **Drain & spin cycle:**
  Enter service diagnostics, then toggle the cycle selector switch five times. The 4 and 1 value LEDs should be lit. Press Start to enter the 'Drain and spin cycle'. Press Start for 3 to 5 seconds to cancel Drain and spin cycle. The cycle will end but the lid will remain locked until the basket stops completely.

- **UI test mode:**
  Enter service diagnostics, then toggle the cycle selector switch six times. The 4 and 2 value LEDs should be lit. Refer to the tech sheet for complete details for this test.

- **Software version display mode:**
  Enter service diagnostics, then toggle the cycle selector switch seven times. The 4, 2 and 1 value LEDs should be lit. Press Start to enter the 'Software version display mode'. Refer to the tech sheet for complete details of how to read the version number.

- **Factory diagnostics mode:**
  Enter service diagnostics, then toggle the cycle selector switch eight times. The 8 value LED should be lit. This setting is not used.

- **Tachometer verification mode:**
  Enter service diagnostics, then toggle the cycle selector switch nine times. The 8 and 1 value LEDs should be lit. Press Start to enter 'Tachometer verification'. Manually rotate the basket and the LED's should cycle from right to left to verify the shifter actuator is recognizing rotation.

- **Dry factory diagnostics:**
  Enter service diagnostics, then toggle the cycle selector switch ten times. The 8 and 2 value LEDs should be lit. This setting is not used.

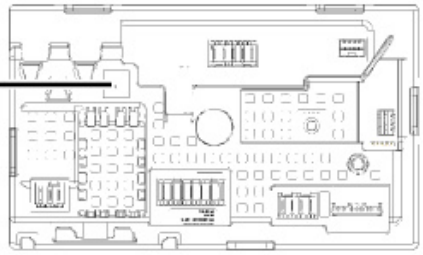
- Factory cal test cycle:
  Enter service diagnostics, then toggle the cycle selector switch eleven times. The 8, 2 and 1 value LEDs should be lit. This setting is not used.

- **Clean washer cycle:**
  Enter service diagnostics, then toggle the cycle selector switch 12 times. The 8 and 4 value LEDs should be lit. Use with Afresh® products to clean out the washer. Make sure nothing is in the washer during a clean washer cycle.

TROUBLESHOOTING GUIDE

NOTE: Refer to the Tech Sheet for the complete Troubleshooting Guide and all of the Troubleshooting Tests

- A troubleshooting tool has been implemented on the CCU—a diagnostic LED.
- LED ON – The Control is detecting correct incoming line voltage and the processor is functioning.
- LED OFF – Control malfunction.

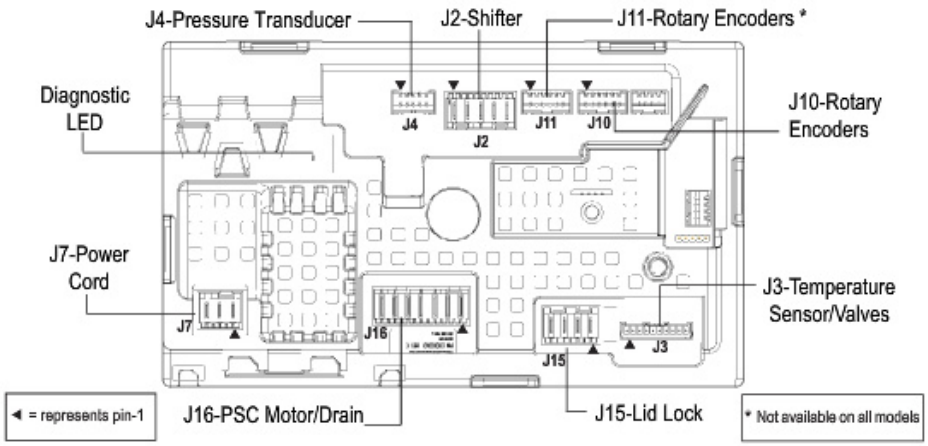


LED Location
Figure 1

CENTRAL CONTROL UNIT CONNECTORS & PINOUTS

Main Control Board Connectors & Pinouts (Figure 3)

Connector	Function	Pin	Color	Signal
J2	SHIFTER	J2-5		OPEN
		J2-4	BLK	+13VDC
		J2-3	GRY	-5VDC (CIRCUIT GND)
		J2-2	PNK	RPM INPUT
		J2-1	BLU	SHIFTER POSITION INPUT
J3	TEMP	J3-10	BLK	TEMP THERMISTOR INPUT (HYBRID)
		J3-9	BLK	TEMP THERMISTOR GND (HYBRID)
	WALVES	J3-8		OPEN
		J3-7		OPEN
		J3-6		OPEN
		J3-5	BLU	COLD VALVE (L1)
		J3-4	RED	HOT VALVE (L1)
		J3-3		OPEN
		J3-2		OPEN
		J3-1	WHT	NEUTRAL
J4	PRESSURE TRANSDUCER	J4-3	BLU	PRESSURE TRANSDUCER INPUT
		J4-2		OPEN
		J4-1	BLU	-5VDC (CIRCUIT GND)
J7	POWER CORD	J7-3	WHT	NEUTRAL
		J7-2		OPEN
		J7-1	BLK	L1
J10	ROTARY ENCODERS	J10-6	BLK	ROW 2
		J10-5	BLK	ROW 3
		J10-4	BLK	COLUMN 0
		J10-3	BLK	COLUMN 1
		J10-2	BLK	COLUMN 2
		J10-1	BLK	COLUMN 3
J11	ROTARY ENCODERS	J11-6	RED	ROW 4
		J11-5	RED	ROW 5
		J11-4	RED	COLUMN 0
		J11-3	RED	COLUMN 1
		J11-2	RED	COLUMN 2
		J11-1	RED	COLUMN 3
J15	LID LOCK	J15-4	RED	LOCK SWITCH
		J15-3	WHT	NEUTRAL
		J15-2	BLU	LID SWITCH INPUT
		J15-1	YEL	LOCK SWITCH SOLENOID (L1)
J16	MOTOR	J16-7	ORN	MOTOR CCW WINDING (L1)
		J16-6	RED	MOTOR CW WINDING (L1)
		J16-5		OPEN
		J16-4	WHT	MOTOR (NEUTRAL)
	DRAIN	J16-3	LT BLU	DRAIN PUMP MOTOR (L1)
		J16-2	W/ BLU	SHIFTER MOTOR (NEUTRAL)
		J16-1	BRN	SHIFTER MOTOR (L1)



CYCLE TIMING CHARTS

Normal Eco Cycle

Cycle Phase:	Spin Fill	Static Fill	Agitation	Drain	Initial Spin	Rinse Spin Fill	Rinse Static Fill	Agitation	Drain	Spin & Drain	Cycle Time
Time, minutes:	2	1.3	10	2	1	2	0.5	2	2	9	32
Lid Locked:	No	No	No	No	Yes	No	No	No	No	Yes	

Mixed Cycle

Cycle Phase:	Spin Fill	Static Fill	Agitation	Drain	Spin & Drain	Rinse Spin Fill	Rinse Static Fill	Agitation	Drain	Spin & Drain	Cycle Time
Time, minutes:	3.25	2	9	2	1	3.25	2	2	2	6	32
Lid Locked:	No	No	No	No	Yes	No	No	No	No	Yes	

Delicates Cycle

Cycle Phase:	Spin Fill	Static Fill	Agitation	Drain	Spin & Drain	Rinse Spin Fill	Rinse Static Fill	Agitation	Drain	Spin & Drain	Cycle Time
Time, minutes:	3.25	2	6	2	1	3.25	2	2	2	6	29
Lid Locked:	No	No	No	No	Yes	No	No	No	No	Yes	

PowerWash Cycle

Cycle Phase:	Spin Fill	Static Fill	Agitation	Drain	Spin & Drain	Rinse Spin Fill	Rinse Static Fill	Agitation	Drain	Spin & Drain	Cycle Time
Time, minutes:	3.25	2	12	2	1	3.25	2	2	2	6	35
Lid Locked:	No	No	No	No	Yes	No	No	No	No	Yes	

Bulky Items/Beddings Cycle

Cycle Phase:	Spin Fill	Static Fill	Agitation	Drain	Spin & Drain	Rinse Deep Fill	Rinse Static Fill	Agitation	Drain	Spin & Drain	Cycle Time
Time, minutes:	3.25	2.75	9	2	1	3.25	2	2	2	6	33
Lid Locked:	No	No	No	No	Yes	No	No	No	No	Yes	

Rinse & Spin Cycle (Model 2795 only)

Cycle Phase:	Spin Fill	Agitation	Drain	Spin & Drain	Cycle Time
Time, minutes:	5.25	2	2	6	18
Lid Locked:	No	No	No	Yes	

Drain & Spin Cycle (Model 2795 only)

Cycle Phase:	Drain	Spin & Drain	Cycle Time
Time, minutes:	2	6	11
Lid Locked:	No	Yes	

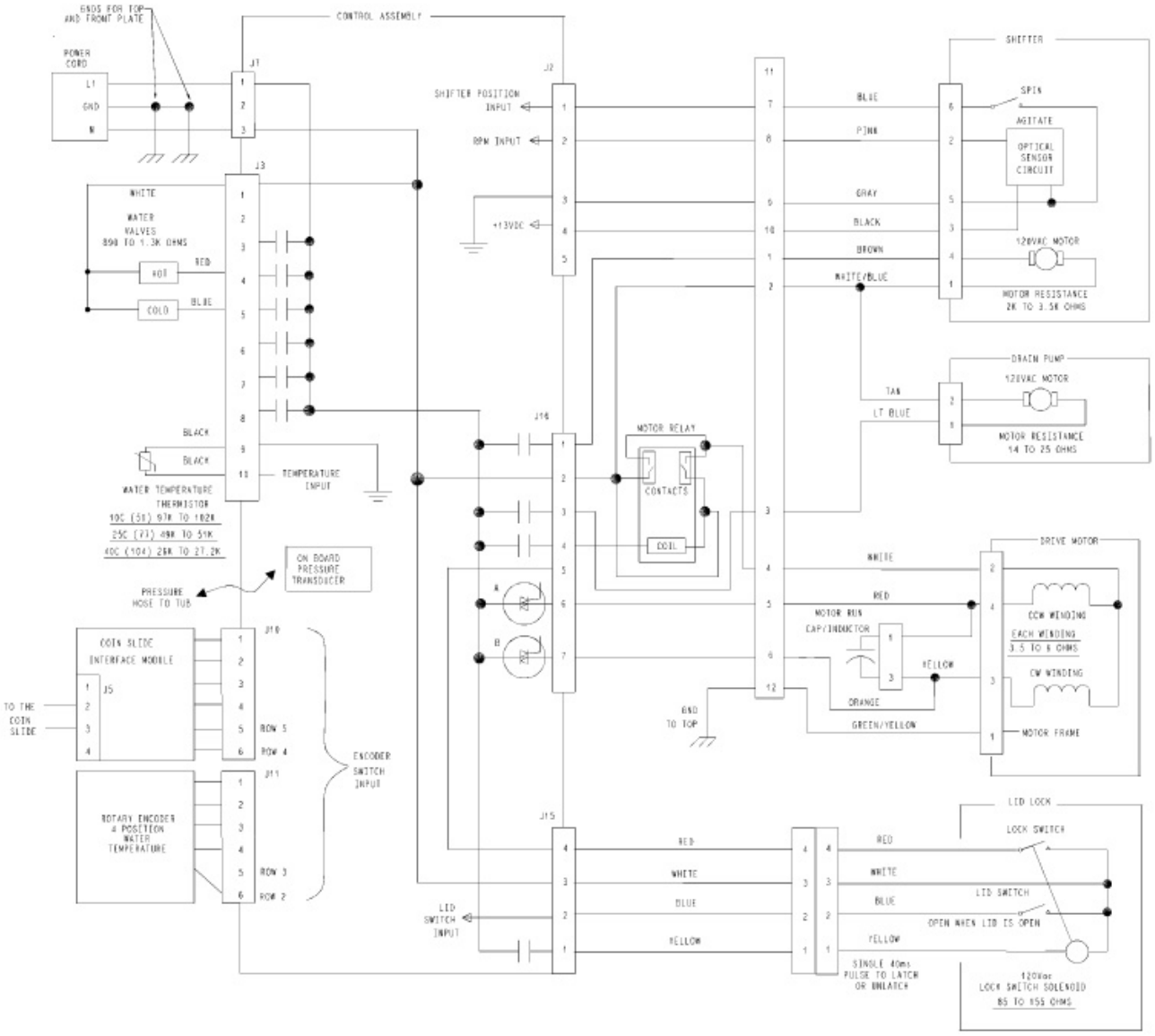
Spin Chart

Cycle	Initial	Final	Rinse Spins
Normal Eco	500	700	160
Mixed	500	700	160
Delicates	250	500	160
PowerWash	500	700	160
Rinse & Spin	N/A	700	N/A
Drain & Spin	N/A	700	N/A

All times shown are averages, as individual segments may change due to load size and composition, as well as detergent type and amount.

WIRING DIAGRAM

IMPORTANT: Electrostatic discharge may cause damage to washing machine control electronics. See page 1-1 for ESD information.
NOTE: Schematic shows shifter in SPIN position, lock switch open, and motor off.

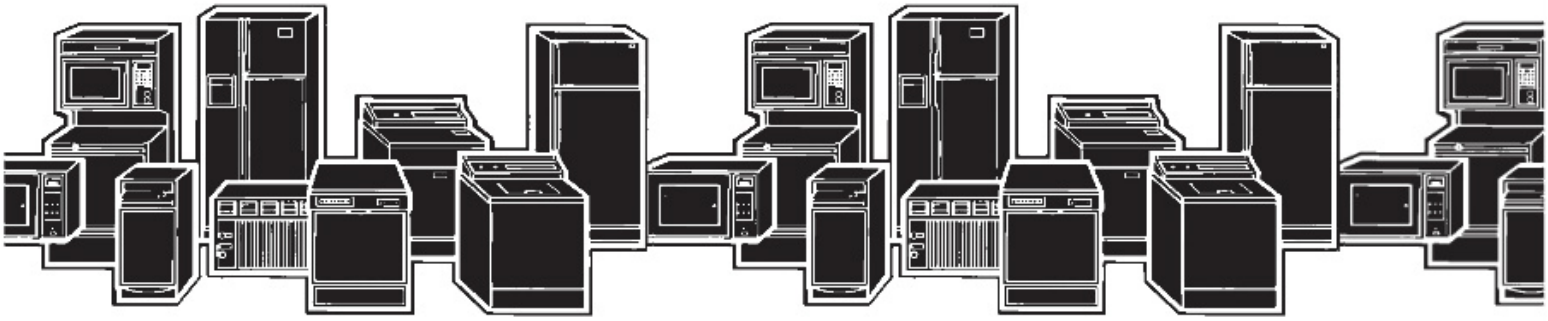


Legend

---- NOTES ----

ALPHABETICAL COMPONENT INDEX

Agitator 3-24
Cabinet 3-46
Capacitor 3-34
Central control unit - CCU 3-3
Clothes guard 3-25
Coin funnel 3-17
Coin slide adapter plate 3-16
Coin slide interface board 3-6
Coin slide removal 3-14
Console open & components 3-1
Drain pump 3-39
Drain pump outlet hose 3-40
Drive belt 3-33
Drive motor 3-35
Drive pulley 3-36
Facia removal 3-2
Front panel 3-29
Lid bumpers 3-18
Lid lock 3-21
Lid strike 3-22
Metercase equipped models 3-13
Metercase removal 3-15
Motor relay 3-7
Outer tub 3-43
Shifter 3-37
Spin basket 3-27
Splutch assembly 3-38
Temperature selector switch 3-5
Thermistor 3-10
Top panel open 3-19
Top panel removal 3-23
Transmission 3-41
Tub ring 3-26
Tub suspension rods 3-31
Upper back panel 3-12
Upper wire harness 3-11
Water inlet valves 3-8

Whirlpool®

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